Supreme Court, U.S.
FILED
JUN 19 1996
OFFICE OF THE CLERK

No. 95-992

IN THE
Supreme Court of the United States
OCTOBER TERM, 1995

TURNER BROADCASTING SYSTEM, INC., *et al.*,
Appellants,
v.
FEDERAL COMMUNICATIONS COMMISSION, *et al.*,
Appellees.

Appeal from the United States District Court for the District of Columbia

JOINT APPENDIX
Volume II

H. BARTOW FARR, III *
RICHARD G. TARANTO
FARR & TARANTO
2445 M Street, NW
Suite 225
Washington, DC 20037
(202) 775-0184
Counsel for National Cable Television Association, Inc.

ROBERT D. JOFFE
STUART W. GOLD
ROWAN D. WILSON
CRAVATH, SWAINE & MOORE
Worldwide Plaza
825 Eighth Avenue
New York, NY 10019
(212) 474-1000
Counsel for Time Warner Entertainment Company, L.P.

(Additional Counsel for Parties Listed on Inside Cover)

DREW S. DAYS, III *
Solicitor General
FRANK W. HUNGER
Assistant Attorney General
LAWRENCE G. WALLACE
Deputy Solicitor General
PAUL R.Q. WOLFSON
Assistant to the Solicitor General

DOUGLAS N. LETTER
BRUCE G. FORREST
JOHN R. TYLER
JAMES J. GILLIGAN
Attorneys
DEPARTMENT OF JUSTICE
Washington, DC 20530
(202) 514-2217

WILLIAM E. KENNARD
General Counsel
CHRISTOPHER J. WRIGHT
Deputy General Counsel
Federal Communications Commission
Washington, DC 20544

* Counsel of Record

APPEAL DOCKETED DECEMBER 21, 1995
PROBABLE JURISDICTION NOTED FEBRUARY 20, 1996

534 pp

BRIAN CONBOY
THEODORE CASE WHITEHOUSE
WILLKIE FARR & GALLAGHER
Three Lafayette Center
1155 21st Street, NW
Suite 6000
Washington, DC 20036-3384
(202) 328-8000
Counsel for Time Warner Entertainment Company, L.P.

BRUCE D. SOKLER
CHRISTOPHER A. HOLT
TARA M. CORVO
MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C.
701 Pennsylvania Ave., NW
Washington, DC 20004-2608
(202) 434-7300
Counsel for Turner Broadcasting System, Inc., et al.

ALBERT G. LAUBER
PETER VAN N. LOCKWOOD
CAPLIN & DRYSDALE, CHTD.
One Thomas Circle, NW
Washington, DC 20005
(202) 862-5000
Counsel for Discovery Communications, Inc. and The Learning Channel

BRUCE J. ENNIS, JR.
KIT A. PIERSON
DONALD B. VERRILLI, JR.
THOMAS J. PERRELLI
JENNER & BLOCK
601 Thirteenth Street, NW
Washington, DC 20005
(202) 639-6000
Counsel for National Association of Broadcasters and Association of Local Television Stations

CAROLYN F. CORWIN
MARK H. LYNCH
CAROLINE M. BROWN
COVINGTON & BURLING
1201 Pennsylvania Ave., NW
P.O. Box 7566
Washington, DC 20044
(202) 662-6000
Counsel for the Association of America's Public Television Stations, Public Broadcasting Service, and Corporation for Public Broadcasting

EDITOR'S NOTE

THE FOLLOWING PAGES WERE POOR HARD COPY AT THE TIME OF FILMING. IF AND WHEN A BETTER COPY CAN BE OBTAINED, A NEW FICHE WILL BE ISSUED.

TABLE OF CONTENTS

VOLUME I

	Page
Docket Entries	1
Order, *Turner Broadcasting Sys., Inc. v. FCC*, Civ. Docket No. 92-2247 (and consolidated cases) (D.D.C. Mar. 6, 1996) (amending judgment of Dec. 20, 1995)	17
Memorandum Of Discovery Communications, Inc. In Support Of Plaintiffs' Motion For Summary Judgment, App. A (May 26, 1995) (ELRA Group, Inc., *Outdoor Antennas, Reception of Local Television Signals and Cable Television* (Jan. 28, 1986))	19
Defendants' Joint Submission Of Congressional Record In Support Of Motion For Summary Judgment ("DCR"), Vol. I.CC, Exh. 170 (May 26, 1995) (Comments of the NAB in FCC Docket No. 85-349 (Apr. 25, 1986))	23
DCR, Vol. I.DD, Exh. 183 (Joint Petition For Reconsideration of National Cable Television Association, Inc. in FCC Docket No. 85-849 (Dec. 17, 1986))	28
Exhibits Cited In Time Warner Entertainment Company, L.P.'s Memorandum Of Law In Opposition To Defendants' And Intervenors' Summary Judgment Motions And In Further Support Of Its Summary Judgment Motion ("TWE Opp. Exhs."), Vol. I, Exh. 4 (June 16, 1995) (Memorandum from John Abel to Dick Hollands (Feb. 12, 1987))	33
DCR, Vol. I.P, Exh. 52 (FCC Cable Carriage Survey Report (Sept. 1, 1988))	36
Exhibits To Affidavit Of Gregory M. Loss In Support Of Time Warner Entertainment Company, L.P.'s Motion For Summary Judgment ("LAX"), Vol. I, Exh. 11 (May 26, 1995) (NAB, *Advertising Revenues Per Television Household: A Market By Market Analysis* (1990))	65
LAX, Vol. I, Exh. 6 (Research and Planning Memorandum From Rick Ducey To Jeff Baumann, *attaching Television In Transition: The Values of Broadcast Television In A Changing Marketplace* (Jan. 30, 1990))	71

TABLE OF CONTENTS—Continued

	Page
TWE Opp. Exhs., Vol. I, Exh. 20 (Memorandum from Rick Ducey to Jeff Baumann, et al. Re: Cable Drops And Repositions Survey (Jan. 30, 1990))	98
TWE Opp. Exhs., Vol. I, Exh. 17 (Comments In Support Of Fox Broadcasting Company's Petition For Resumption Of Rulemaking And Request For Temporary Relief, FCC Docket No. 82-345 (Mar. 5, 1990)	101
LAX, Vol. I, Exh. 12 (NAB, *Advertising Revenues Per Television Household: A Market by Market Analysis* (1991))	104
LAX, Vol. I, Exh. 13 (*TV Digest* (Jan. 7, 1991))	109
Defendants' Joint Submission Of Additional Evidence In Support Of Motion For Summary Judgment ("DAE"), Vol. VII.M. Exh. 288 (May 26, 1995) (OPP Working Paper Series: *Broadcast Television In A Multichannel Marketplace* (June 1991))	113
LAX, Vol. I, Exh. 14 (Research & Planning Memorandum From Mark Fratrik To Jim May Re: Results From Television Financial Survey (July 19, 1991))	116
TWE Opp. Exhs., Vol. III, Exh. 42 (APTS, *Harm To PTV Stations From Cable System Shifts and Drops* (Aug. 1991))	120
DCR, Vol. I.Q. Exh. 71 (Comments of the NAB, *attaching A/B Switch Availability And Use* (Sept. 25, 1991)	126
DAE, Vol. VII.K, Exh. 239 (Larry Zipin, *Local Cable Advertising Sales: 1992 and Beyond* (Nov. 20, 1991))	134
LAX, Vol. II, Exh. 18 (FTC Staff Study, Carriage of Television Broadcast Signals By Cable Television Systems (Nov. 26, 1991))	157
LAX, Vol. II, Exh. 18 (NAB, *Advertising Revenues Per Television Household: A Market By Market Analysis* (1992))	186
Affidavits In Must Carry Proceedings (Feb. 12, 1993) (Affidavit of Edward J. Weiss, Exh. 2 (Paul Kagan Assocs., *Cable TV Investor* (June 23, 1992)))	192

TABLE OF CONTENTS—Continued

	Page
LAX, Vol. II, Exh. 19 (CPB, *Viewer and Listener Membership Income for Public Television and Radio Grantees: Fiscal Year 1991* (Sept. 1992))	197
DAE, Vol. VII.G, Exh. 157 (Time Warner, Memorandum from T. Bigelow to E. Hamowy (Oct. 20, 1992))	201
LAX, Vol. II, Exh. 21 (1993 NAB Cable System Election Survey Charts (1993))	205
LAX, Vol. II, Exh. 22 (*TV & Cable Fact Book* (1993))	209
Affidavits In Must Carry Proceedings (Feb. 12, 1993) (Affidavit of Joseph J. Collins (Feb. 11, 1993)	215
DAE, Vol. VII.K, Exh. 232 (*The Cable Television Industry: New Technologies, New Opportunities And New Competition* (Mar. 8, 1993))	226
DAE, Vol. VII.K, Exh. 247 (Paul Kagan Assocs., *Cable TV Advertising* (June 22, 1993))	233
DAE, Vol. VII.M, Exh. 292 (Memorandum from W. Ciciora to L. Yaeger, et al. Re: A/B Switches (June 25, 1993))	245
LAX, Vol. II, Exh. 25 (NAB, *TV Today* (July 19, 1993))	247
DAE, Vol. VII.K, Exh. 246 (Paul Kagan Assocs., *Cable TV Advertising* (July 28, 1993))	250
DAE, Vol. VII.I, Exh. 200 (Memorandum From D. Orr To P. Beckham and B. Grumbles Re: TCNS 1994 Marketing Overview (Sept. 17, 1993))	254
DAE, Vol. VII.G, Exh. 161 (*The History Channel: 1994 Business Plan & Financial Forecast* (Nov. 1993))	265
DAE, Vol. VII.I, Exh. 198 (Memorandum From D. Orr to P. Beckham Re: KNWS/TV (Dec. 6, 1993)}	269
DAE, Vol. VII.E, Exh. 91 (Horowitz Assocs., Inc., *State of Cable 1994* (1994))	271

TABLE OF CONTENTS—Continued

	Page
Time Warner Entertainment Company, L.P.'s Corrected Appendix To Brief In Support Of Its Motion For Summary Judgment ("TWE App."), Exh. 16 (May 26, 1995) (NAB, *The Television Industry: 1994 Market-By-Market Review* (1994))	275
TWE Opp. Exhs., Vol. II, Exh. 33 (*Broadcasting and Cable* (May 23, 1994))	281
DAE, Vol. VII.K, Exh. 244 (Paul Kagan Assocs., *Cable TV Advertising* (June 15, 1994))	283
Plaintiffs' Exhibits In Support Of Their Motion For Summary Judgment, Vol. II, Exh. V (May 26, 1995) (Letter from NAB to FCC General Counsel (June 21, 1994))	292
DAE, Vol. VII.K, Exh. 243 (Paul Kagan Assocs., *Cable TV Advertising* (Sept. 30, 1994))	300
DAE, Vol. VII.K, Exh. 266 (Turner Broadcasting, *Top 100 MSOs* (Oct. 1, 1994)	303
DAE, Vol. VII.K, Exh. 242 (Paul Kagan Assocs., *Cable TV Advertising* (Oct. 26, 1994))	307
TWE Opp. Exhs., Vol. II, Exh. 25 (CPB, *Public Broadcasting Income: Fiscal Year 1993* (Dec. 1994))	312
LAX, Vol. III, Exh. 35 (Paul Kagan Assocs., *The Kagan Media Index* (Feb. 24, 1995))	315
Defendants' Rebuttal Declarations And Exhibits, Vol. VIII ("Def. Reb. Decls."), Exh. K (June 16, 1995) (Stipulation and Supplemental Protective Order Concerning Pre-Trial Use of A.C. Nielsen Data in *Turner* (Mar. 27, 1995))	319
Deposition of David Brugger (Apr. 7, 1995)	328
Deposition of James Mooney (Apr. 13, 1995)	330
Deposition of Brendan Clouston (Apr. 14, 1995)	333
Deposition of John Huddy (Apr. 14, 1995)	335
Deposition of Jack N. Goodman (Apr. 17, 1995)	337

TABLE OF CONTENTS—Continued

	Page
Deposition of M. Peter Downey (Apr. 18, 1995, May 18, 1995)	341
Deposition of John C. Siegel (Apr. 18, 1995)	345
Deposition of James J. Popham (Apr. 20, 1995)	346
Expert Report of Stanley M. Besen On Behalf Of Plaintiffs Turner Broadcasting System, Inc., et al. (Apr. 21, 1995)	349
Expert Report of Eldon J. Haakinson (Apr. 21, 1995)	352
Expert Report of Tom Meek (Apr. 21, 1995)	357
Deposition of Bernadette McGuire (Apr. 21, 1995)	360
Deposition of Joseph L. Stern (May 3, 1995)	362
Deposition of James N. Dertouzos (May 4, 1995)	380
Deposition of Eldon J. Haakinson (May 4, 1995)	385
Deposition of Linda McLaughlin (May 8, 1995)	441
Deposition of Tom Meek (May 8, 1995, May 9, 1995)	442
Deposition of Roger G. Noll (May 10, 1995)	446
Deposition of Richard Feldman (May 11, 1995)	460
Deposition of John Haring (May 12, 1995)	461
Deposition of Charles L. Jackson (May 12, 1995)	469
Turner Broadcasting System, Inc.'s Motion For Summary Judgment, Exh. I (May 26, 1995) (*Cable Takes Fresh Angle On Services*, Electronic Media (May 15, 1995))	471
Deposition of Harry M. Shooshan III (May 15, 1995)	477
Deposition of David J. Large (May 16, 1995)	480
Deposition of Jonathan C. Abbott (May 18, 1995)	510
Deposition of Lucie Salhany (May 18, 1995)	512
Def. Reb. Decls., Exh. H (Transcript of Telephone Conference on Discovery Issues (May 18, 1995))	515

TABLE OF CONTENTS—Continued

Page

VOLUME II

Appendix To Public Broadcaster Defendant-Intervenors' Motion For Summary Judgment ("Publ. App."), Vol. 2 (May 26, 1995) (Declaration of Dr. Charles Anderson (May 18, 1995)) 521

Publ. App., Vol. 2 (Declaration of John L. Beabout (May 18, 1995)) 524

DAE, Vol. III.A (Declaration of Douglas Johnson (May 18, 1995)) 528

Publ. App., Vol. 2 (Declaration of David Dial (May 19, 1995)) 539

Publ. App., Vol. 3 (Declaration of Carolyn Bailey Lewis (May 19, 1995)) 543

Publ. App., Vol. 3 (Declaration of Denins Malloy (May 19, 1995)) 550

Publ. App., Vol. 3 (Declaration of Steven K. Meuche (May 19, 1995)) 556

Publ. App., Vol. 3 (Declaration of Virgle Smith (May 19, 1995)) 560

Publ. App., Vol 2 (Declaration of Daniel Alpert (May 22, 1995)) 566

Publ. App., Vol. 2 (Declaration of David Hosley (May 22, 1995)) 571

DAE, Vol. II.B (Declaration of Eldon J. Haakinson (May 23, 1995)) 579

DAE, Vol. II.A (Declaration of Tom Meek (May 23, 1995)) 616

DAE, Vol. II.A (Affidavit of Lucie Salhany (May 23, 1995)) 634

DAE, Vol. II.A (Declaration of David E. Schutz (May 23, 1995)) 638

Memorandum Of National Cable Television Association, Inc. In Support Of Plaintiffs' Motion For Summary Judgment ("NCTA Br."), Exh. B (May 26, 1995) (Declaration of Peter D. Shapiro (May 23, 1995)) 656

TABLE OF CONTENTS—Continued

Page

DAE, Vol. II.A (Declaration of Harry M. Shooshan III (May 23, 1995)) 683

Discovery Communications, Inc., Statement Of Material Facts Not In Dispute (May 26, 1995) (Affidavit of Joseph L. Stern (May 23, 1995)) 755

Declaration of Stanley M. Besen on Behalf of Plaintiffs Turner Broadcasting System, Inc., et al. (May 24, 1995) 775

DAE, Vol. II.B (Declaration of James N. Dertouzos (May 24, 1995)) 955

Publ. App., Vol. 4 (Declaration of Richard Feldman (May 24, 1995)) 975

Discovery Communications, Inc., Statement Of Material Facts Not In Dispute (May 26, 1995) (Declaration of William Goodwyn (May 24, 1995)) 983

DAE, Vol. II.B (Declaration of Roger G. Noll (May 24, 1995)) 998

Publ. App., Vol. 4 (Declaration of Jonathon C. Abbott (May 25, 1995)) 1032

VOLUME III

Affidavits In Support Of Time Warner Entertainment Company, L.P.'s Motion For Summary Judgment ("TWE Affs.") (May 26, 1995) (Affidavit of E. Thayer Bigelow (May 25, 1995)) 1051

TWE Affs. (Affidavit of Brendan Clouston (May 25, 1995)) 1055

Publ. App., Vol. 4 (Declaration of M. Peter Downey (May 25, 1995)) 1061

TWE Affs. (Affidavit of Fred Dressler (May 25, 1995)) 1083

TWE Affs. (Affidavit of Charles W. Ellis (May 25, 1995)) 1089

TWE Affs. (Affidavit of John F. Gault (May 25, 1995)) 1093

TABLE OF CONTENTS—Continued

	Page
DAE, Vol. II.A (Declaration of John Haring (May 25, 1995))	1098
TWE Affs. (Declaration of Robert A. Hillyer (May 25, 1995))	1109
DAE, Vol. II.B (Declaration of Charles L. Jackson (May 25, 1995))	1111
TWE Affs. (Affidavit of David Kinley (May 25, 1995))	1128
NCTA Br. (Declaration of Gregory Klein (May 25, 1995))	1134
Declaration of John L. Peterman (May 25, 1995)	1151
DAE, Vol. II.B (Declaration of Jeffrey H. Rohlfs (May 25, 1995))	1155
TWE Affs. (Affidavit of Laurence Zipin (May 25, 1995))	1170
Publ. App., Vol. 1 (Declaration of David J. Brugger (May 26, 1995))	1180
Discovery Communications, Inc., Statement Of Material Facts Not In Dispute (May 26, 1995) (Affidavit of David J. Large (May 26, 1995))	1213
All Parties' Joint Statement Of Undisputed Facts (May 26, 1995)	1245
DAE, Vol. VII.K, Exh. 249 (Cable Advertising Overview (May 26, 1995))	1247
Defendants' Joint Statement Of Evidence Before Congress, Parts 1 and 2 (May 26, 1995)	1249

VOLUME IV

Defendants' Joint Statement Of Evidence Before Congress, Parts 1 and 2 (May 26, 1995) (continued)	1567
Public Broadcaster Defendant-Intervenors' Supplemental Statement of Evidence Before Congress (May 26, 1995)	1705
DAE, Vol. VII.J, Exh. 217 (February Industry Issues (May 26, 1995))	1761

TABLE OF CONTENTS—Continued

	Page
Time Warner Entertainment Company, L.P.'s Affidavits In Opposition To Defendants' And Intervenors' Summary Judgment Motions And In Further Support Of Its Summary Judgment Motion ("TWE Opp. Affs.") (June 16, 1995) (Supplemental Affidavit of Charles W. Ellis (June 13, 1995))	1764
Memorandum Of Discovery Communications, Inc. In Opposition To Defendants' Motions For Summary Judgment ("Discovery Opp. Br.") (June 16, 1995) (Supplemental Affidavit of David J. Large (June 13, 1995))	1769
TWE Opp. Affs. (Supplemental Affidavit of Brendan Clouston (June 14, 1995))	1784
Def. Reb. Decls. (Rebuttal Declaration of Roger G. Noll (June 14, 1995))	1788
TWE Opp. Affs. (Supplemental Affidavit of Laurence Zipin (June 14, 1995))	1808
Second Declaration of Stanley M. Besen On Behalf of Plaintiffs Turner Broadcasting System, Inc., et al. (June 15, 1995)	1811
Def. Reb. Decls. (Second Declaration of Tom Meek (June 15, 1995))	1853
Def. Reb. Decls. (Rebuttal Declaration of Jeffrey H. Rohlfs (June 15, 1995))	1869
Def. Reb. Decls. (Rebuttal Declaration of David E. Schutz (June 15, 1995))	1878
Def. Reb. Decls. (Rebuttal Declaration of James N. Dertouzos (June 16, 1995))	1894
Discovery Opp. Br. (Supplemental Affidavit of Joseph Stern (June 16, 1995))	1906
Memorandum Of Turner Plaintiffs In Opposition To Defendants' Motions For Summary Judgment, App. A (June 16, 1995) (Carriage Chart (June 16, 1995))	1925
Defendants' Supplemental Appendix In Opposition To Plaintiffs' Motion For Summary Judgment (June 16, 1995)	1931

TABLE OF CONTENTS—Continued

	Page
Defendants' Reply Declarations And Exhibits, Vol. IX ("Def. Reply Decls.") (June 30, 1995) (Reply Declaration of Roger G. Noll (June 22, 1995))	2001
Def. Reply Decls. (Reply Declaration of James N. Dertouzos (June 28, 1995))	2012
Def. Reply Decls. (Supplemental Declaration of Eldon J. Haakinson (June 28, 1995))	2024
Third Declaration of Stanley M. Besen On Behalf of Plaintiffs Turner Broadcasting System, Inc., et al. (June 29, 1995)	2027
Def. Reply Decl. (Third Declaration of Tom Meek (June 29, 1995))	2052
Appendix To Public Broadcaster Defendant-Intervenors' Reply Memorandum In Support Of Motion For Summary Judgment (June 30, 1995) (Declaration of Edward J. Coltman (June 30, 1995))	2073
Federal Defendants' Statement In Response To The Court's Order of September 7, 1995 (Sept. 18, 1995)	2080
Plaintiffs' Joint Objections To Federal Defendants' Statement (Sept. 29, 1995)	2101
VOLUME V (Under Seal)	
TWE Opp. Exhs., Vol. II, Exh. 22 (APTS, *Public Television Service and Structure Analysis* (May 1991))	2111
TWE Opp. Exhs., Vol. II, Exh. 26 (APTS, *Critical System Objectives for Public Television (1992 Status Report)* (Oct. 1992))	2114
DAE, Vol. VII.L, Exh. 284 (Memorandum From F. Lopez to T. Baxter, et al. Re: Adlink's Presentations on Retransmission Consent (June 14, 1993))	2117
DAE, Vol. VII.K, Exh. 228 (Tele-Communications, Inc., *Cable Advertising Executive Summary* (Mar. 1994))	2119
TWE Opp. Exhs., Vol. II, Exh. 23 (APTS, *Public Television in the Information Age* (July 1994))	2127

TABLE OF CONTENTS—Continued

	Page
DAE, Vol. III.A (Declaration of Edward Lau (May 18, 1995))	2136
DAE, Vol. II.A (Declaration of Harry M. Shooshan III, Attach. J (May 23, 1995))	2139
DAE, Vol. II.A (Declaration of John Haring, Exh. B (May 25, 1995))	2143
DAE, Vol. VII.M, Exh. 291 (Tele-Communications, Inc., *Corpus Christi Retransmission-consent Research Highlights* (May 26, 1995))	2159
TWE Affs. (Affidavit of Linda McLaughlin (May 25, 1995))	2169
TWE Opp. Affs. (Rebuttal Affidavit of Linda McLaughlin (June 15, 1995))	2190
Surrebuttal Affidavit of Linda McLaughlin (June 29, 1995)	2221
Time Warner Entertainment Company, L.P.'s Memorandum Of Law In Opposition To Defendants' And Intervenors' Summary Judgment Motions And In Further Support Of Its Summary Judgment Motion, 8-17 (June 16, 1995)	2234
Time Warner Entertainment Company, L.P.'s Reply Memorandum Of Law In Support Of Its Motion For Summary Judgment, Exhs. A and B (June 30, 1995)	2242
Time Warner Entertainment Company, L.P.'s Broadcast Station Rebuttal (June 16, 1995)	2264

These documents do not appear in the Joint Appendix. They can be found in the Jurisdictional Statement on the following pages:

Memorandum and Order, *Turner Broadcasting Sys., Inc. v. FCC*, Civ. Docket No. 92-2247 (and consolidated cases) (D.D.C. Dec. 12, 1995)	1a
Judgment, *Turner Broadcasting Sys., Inc. v. FCC*, Civ. Docket No. 92-2247 (and consolidated cases) (D.D.C. Dec. 20, 1995)	153a

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 2

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DR. CHARLES ANDERSON

1. My name is Charles Anderson. I am the Assistant Vice President for Finance and Administration at Western Kentucky University. I an responsible for information technology at the university and take an active role in the management of WKYU, a public television station located in Bowling Green, Kentucky. I have held this position since 1991. Prior to that time, I held the position of Associate Dean and Director of Public Television at Western Kentucky University from 1989-1991. In both positions, I have been the person responsible for the must carry matters for WKYU.

2. WKYU, Channel 24, is a noncommercial educational broadcast television station licensed to Western Kentucky University. WKYU first began its local public television service to south central Kentucky in January 1989.

3. WKYU provides a service that includes college-credit telecourses broadcast in weekday prime time, selected PBS programming, local productions, and programs obtained through various sources, including the regional public television networks. WKYU's local television programming has garnered a number of regional and national awards.

4. WKYU does not significantly duplicate programming offered by other public television stations in the area. In particular, WKYU offers college telecourses during weekday prime time, so that working adults are

able to watch. No other public television station in the area provides a similar service.

5. WKYU is a qualified noncommercial educational television station as defined in subsection (l)(1) of Section 5 of the 1992 Cable Act. WKYU is a local station as defined in subsection (l)(2) of Section 5 of the Act with regard to numerous cable systems in the south central Kentucky and northern Tennessee area, including Cablevision of Tompkinsville, Edmonton/Summer Shade and Munfordville; Tele-media of Scottsville, Morgantown, Brownsville, Park City, Adairville, Russellville, Auburn; Telescripps of Horse Cave/Cave City, Glasgow, Greenville/Powderly/Drakesboro, and Lietchfield/Clarkson; Ohio County Cablevision in Ohio County of Hartford, Beaver Dam, Centertown, Echlos, McHenry and Cromwell; Tennessee Valley Cablevision of Portland, Lafayette, and Westmoreland, Tennessee; TKR of Bowling Green; Electric Plant Board System of Glasgow; and Telemedia of Franklin, Livermore and Whitehouse, Tennessee.

6. In 1989, soon after WKYU started operations, I began efforts to obtain carriage on a number of cable systems in the station's service area in counties contiguous to the county of Warren, which contains WKYU's city of license. Correspondence relating to several of these requests is attached as Exhibit 1. A few cable systems agreed to add WKYU, but most denied carriage or simply failed to respond. Prior to passage of the "must carry" statute in 1992, WKYU was carried on only four cable systems within its service area—TKR of Bowling Green-Warren County, Electric Plant Board in Glasgow, Tele-Scripps system in Glasgow, and the Tele-media system in Franklin.

* * * *

May 18, 1995

/s/ Charles Anderson
CHARLES ANDERSON

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 2

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DICTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF JOHN L. BEABOUT

1. My name is John L. Beabout. I am General Manager of public television station WEIU-TV, located in Charleston, Illinois. I have held the position of General Manager since the station began operating on July 1, 1986. Prior to that time I held various professional and academic positions in educational institutions in distance learning, communications, and cable-related areas in education.

2. WEIU, Channel 51, is a noncommercial educational television station licensed to the Illinois Board of Governors of State Colleges and Universities, and is located at Eastern Illinois University in Charleston. WEIU's mission is to provide quality educational, informational and cultural programming, with an emphasis on needs of the citizens of Charleston and the surrounding eleven-county service area. WEIU's programming includes Ready-to-Learn PBS programming, designed to prepare preschool children for school. WEIU airs nine hours per day of children's programming. WEIU produces and broadcasts over 300 hours of local programs per year. Additionally, WEIU broadcasts 15-20 hours per week of PBS Adult Learning Service, which WEIU targets to junior high school and high school students to advance and supplement their regular course work. WEIU provides a wide range of additional community based programming to serve the local needs of persons in the Charleston area.

3. WEIU is a qualified noncommercial educational television station as defined in subsection (l)(1) of Section 5 of the 1992 Cable Act. WEIU is a local station as defined in subsection (l)(2) of Section 5 of the Act with regard to the following cable systems: TCI (Charleston and Mattoon); United Artists Cable (later United Cable of Southern Illinois, and, subsequent to that, TCI of Effingham Cable) (Effingham); Illini Cablevision (Arcola, Arthur, Atwood, Camargo, Hammond, Hindsboro, Humboldt, Hinesdale, Oakland, Pierson Station, Tuscola, and Villa Grove); Cardinal Telecable (Paris); Command Cable (Broadlands, Casey, Greenup, Marshall, Martinsville, Newman, Toledo, Neoga); Time Warner (Champaign and Urbana); Triax Cable (Hutonville, Palestine, Sullivan, Robinson, and Oblong); Moultrie Telecommunications (Lovington); Jones Intercable (Pesotum and Tolono); TCI (Stewardson and Strasburg); MWI Cable (Lerna); and Douglas Communications (Brocton, Newport, Hume, Metcalf and Sidell).

4. WEIU's programming does not duplicate programming provided by other public television stations, such as WILL and WUSI, that are carried on cable systems that cover some parts of the same counties as WEIU. In fact, over 80 percent of WEIU's programming is non-duplicative of these two stations' programming. As discussed above, much of the educational programming is locally produced and unique to WEIU. Additionally, PBS does not consider WEIU an overlap station. WEIU operates from 6:00 a.m. to midnight, Mondays through Saturdays, and 10:00 a.m. to midnight on Sundays.

* * * *

11. Two cable systems have continued to deny WEIU carriage even after the must carry rules. These are MWI Cable in Lerna and Douglas Communications in Brocton, Newport, Hume, Metcalf, and Sidell. WEIU has been requesting carriage on the MW1 system since 1989, and on the Douglas system since 1993. Documents reflecting

these requests are attached as Exhibit 2. WEIU has not been able to pursue filing complaints against these two cable companies due to limited resources, both in terms of financial ability and staff time.

* * * *

May 18, 1995

/s/ John L. Beabout
JOHN L. BEABOUT

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF SWORN STATEMENTS BY COMMERCIAL BROADCAST STATIONS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME III.A

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DOUGLAS JOHNSON

I, Douglas Johnson, pursuant to 28 U.S.C. § 1746, hereby depose and say:

1. I am President of Johnson Broadcasting, Inc. ("Johnson"). Johnson is the licensee of KNWS-TV, Channel 51, Katy, Texas. In January 1989, the Federal Communications Commission ("FCC") granted Johnson a permit to construct and operate KNWS-TV. I have been Johnson's sole shareholder, director and president from the time Johnson filed its initial application with the FCC. I have worked full-time at the station since before it commenced program operations on November 3, 1993.

2. I have had various other experience in the broadcast television industry. My experience in this industry dates back to 1968 and includes such positions as Program Manager, Sales Manager and General Manager for WXON-TV, Detroit, Michigan.

Station Background

3. KNWS-TV is licensed to Katy, Texas. KNWS' signal covers the Houston metropolitan area. The Houston Area of Dominant Influence ("ADI") is the 11th ranked market. KNWS has been operating as a full-power television station since sign-on.

4. When KNWS signed on the air in November 1993, there were 1,465,700 television households in the Houston market, of which 726,110 were cable households. The

cable penetration rate in the Houston market was about 50%. As of 1995, the cable penetration rate has increased to 830,480 households or about 53% of the market.

5. KNWS is a 24 hour per day all-news station. KNWS offers its viewers a combination of national and local news throughout the day. KNWS-TV's program format is similar to that of CNN (Cable News Network) with the important exception that it offers a substantial amount of local news and information. KNWS is the only all-news television station in the Houston market. KNWS has received numerous letters of commendation and statements of support from such dignitaries as the current and former Mayors of Houston and former First Lady Barbara Bush; these letters particularly emphasize the important community service we are providing.

6. Since sign-on, KNWS has employed between 45 and 50 full-time staff people and another 10-20 part-time staffers. This includes the 6-10 local news reporters and anchors on our staff.

7. Carriage on the cable systems in the Houston ADI is critical to the financial health and performance of the station. Cable television has evolved into the only medium through which KNWS can reach many of its potential viewers. Once viewers become cable subscribers, they do not use any other mode of receiving their television signal and ssentially abandon the use of their over-the-air home antenna.

8. The must-carry provisions have had a profound impact on KNWS' ability to reach viewers in its market. Although KNWS has now achieved substantial carriage under the must-carry provisions, it had to battle the cable systems for carriage. Exhibit A reflects the letters sent to the surrounding cable systems requesting must-carry status under the Cable Act. Although some systems complied with their must-carry obligations, KNWS had to

fight to obtain carriage on *all* three major systems in the Houston market—Time Warner Cable, Tele-Communications, Inc. ("TCI"), and Prime Cable. Between them, these three systems alone serve 555,000 of the 830,980 cable household subscribers in the Houston metropolitan area.

9. TCI waited 90 days before carrying the station. Time Warner, which holds an investment in CNN, initially refused to carry KNWS on its system. Time Warner also tried to assign KNWS to an inferior channel position on its cable system. Only after a prolonged negotiation did Time Warner agree to carry KNWS at a mutually agreeable channel position. Time Warner also attempted to have KNWS' CNN feeds cancelled because Time Warner carries CNN on its Houston cable system and views the station's programming as competition to CNN.

10. Prime Cable of Houston servcs the most affluent areas in the Houston metropolitan area. This cable system flatly refused to carry KNWS. Prime Cable advised KNWS in writing that, in the absence of must-carry, it simply would not carry KNWS, and that, *notwithstanding the must-carry legislation and rules,* it would not carry KNWS "until after a Supreme Court decision that permits must-carry to survive." In a letter to me dated December 12, 1993, Robert Burns, Vice-President of Prime Cable said:

> I think you will agree that it is not in the best interests of your viewers or our customers to add the KNWS signal to our line-up at the end of January [1994] only to remove it, perhaps just days or weeks later, when the Supreme Court renders its decision. Accordingly, Prme Cable Houston has decided to not add KNWS to its channel line-ups until after a Supreme Court decision that permits must-carry to survive.

Letter from Robert Burns, Prime Cable Vice-President and General Manager to Douglas Johnson, KNWS President dated December 12, 1993, attached as Exhibit B.

11. KNWS filed a "must-carry" complaint with the FCC against Prime Cable. The Commission found in KNWS' favor and ordered Prime Cable to immediately carry the station. Prime Cable then refused to negotiate a channel position for KNWS and unilaterally assigned KNWS to a different channel on *each* of its six head-ends in the Houston area. Each of these channel positions were at the high end of the Prime Cable system. KNWS was thus forced to file a *second* complaint with the Commission (in September 1994) protesting this action. The Commission has not yet resolved this complaint.

12. Must-carry is vital to KNWS' continued existence. As a result of the must-carry legislation, KNWS is viewed on 38 cable systems serving almost 600,000 subscribers. This carriage is critical to my ability to raise the necessary revenue to allow the station to function.

13. The majority of KNWS' revenues are from spot advertising. Buyers of spot advertising on KNWS are focused singularly on the amount of cable carriage our station obtains because the primary factor driving these buyers' decisions is the potential reach of the station—in other words, how many viewers are exposed to an advertisement being run on this station. Thus, in the period during which Prime Cable refused to carry the station, many advertisers similarly refused to advertise on KNWS—for the simple reason that Prime Cable reaches the most affluent residential and business neighborhoods. Once Prime Cable was required to carry KNWS, these advertisers became willing to purchase time on the station.

14. This is demonstrated by the documents attached as Exhibit C—two letters, dated March 1, 1994 and April 26, 1994, which I received from advertisers in the Houston metropolitan area. As these advertisers note,

by Spring of 1994, KNWS had gained carriage on most of the cable systems in the Houston area. Because Prime Cable was still refusing to carry KNWS, however, these advertisers would not buy time on KNWS:

> We became concerned when we found that you were having trouble getting cable access on a number of cable networks in the Houston area. We understand that you have now been added to all systems with the exception of Prime Cable, which, ironically, happens to be the cable supplier for me and two members of our four-man Executive Committee. . . .
>
> We understand that you and your staff are taking all measures available to you in order to rectify this situation, however, until the gap in your coverage is removed as it affects the overall ratings picture, we will not be able to continue our advertising effort on KNWS.

Letter from Theodore J. Thompson to Doug Johnson (April 26, 1994).

> I have looked over your proposal regarding my body shop. . . .
>
> It seems that your station does not have airtime on Prime Cable. My shop is located in west Houston which is serviced by this cable company. Since this is the area where I get most of my business, I really think at this time, it would not be in my best interest to advertise with a station that would not be seen in my area.

Letter from Kirk Nightmire, Corvette Collisions of Houston to KNWS (March 1, 1994).

15. The same is true of buyers of blocks of programming time. These buyers only buy time on stations which have an "audience" and, without significant cable carriage, a station simply cannot generate audience figures

which will satisfy buyers. Before Prime Cable, Time Warner and TCI agreed to carry the station, KNWS was unable to sell any programming time. Since KNWS has been carried on the Houston cable systems it has been able to consistently sell programming time. For example, in May 1995 KNWS sold about 10 hours per week of programming time.

16. My experience with cable systems in the Houston market indicates that without must-carry, KNWS would not have been carried by any of the major cable systems in the market. Without such carriage, my station would still be struggling to break even because, as explained above, without cable carriage it is extremely difficult to attract advertisers and, correspondingly, to realize advertising revenues.

17. * * * If the must-carry rules were struck down, I believe that KNWS would be dropped by a significant number of cable systems in the Houston area. All of the economic advantages gained as a result of must-carry would be lost and, ultimately, KNWS' future viability would be seriously jeopardized.

May 18, 1995

/s/ Douglas Johnson
DOUGLAS JOHNSON

[EXHIBIT B]

PRIME
CABLE [logo]

December 3, 1993

Mr. Doug Johnson
President
KNWS, Channel 51
8440 Westpark
Houston, Texas 77063

Dear Mr. Johnson:

In a recent conversation we discussed the possibility of Prime Cable Houston adding Channel 51 to our systems around the end of January, 1994. It has recently come to my attention, however, that the United States Supreme Court has agreed to review the must-carry provisions of the 1992 Cable Act and, further, that the Court's decision is expected early next year. Because must-carry is the basis for your carriage request on our cable systems, and because the must-carry rules have twice been overturned by lower courts, there exists a strong possibility that must-carry will again be reversed by the Supreme Court.

I think you will agree that it is not in the best interests of your viewers or our customers to add the KNWS signal to our line-up at the end of January only to remove it, perhaps just days or weeks later, when the Supreme Court renders its decision. Accordingly, Prime Cable Houston has decided to not add KNWS to its channel line-ups until after a Supreme Court decision that permits must-carry to survive.

Thank you for your consideration.

Best regards,

/s/ R.M. Burns
Robert M. Burns
Vice President and Group Manager

RMB/ljh

DJ120393

JetFax 8000D Rev 2.25US Dec-06 Mon 16:01 1993 KNWS - 51 KNWS - 51

Transmit Confirmation Report

Start Time	Usage	Connection Tel	Mode	Pgs	Status	Print Time	Dept
12/06 16:01	0'43	202 785 2804	Xmt	2	Sent: Job 634		

KNWS 51

FAX COVER SHEET

TO: ARTHUR BELENDIUK

FROM: DOUG JOHNSON

DATE: 12/6/93

NO. OF PAGES: 2

FAX NO. 202 785-2804

KNWS FAX: (713) 975-6397
KNWS VOICE: (713) 974-5697

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 2

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DAVID DIAL

1. My name is David Dial. I am General Manager of WNIN, a public television station located in Evansville, Indiana. I have held the position of General Manager since October, 1984. Prior to coming to WNIN, I was Program Manager at WHRS (now WXEL) in West Palm Beach, Florida. Prior to that, I was Television Manager of WXXI, Rochester, New York.

2. WNIN, Channel 9, is a noncommercial educational broadcast television station licensed to Southwest Indiana Public Broadcasting, Inc. WNIN began broadcasting in 1970, serving the predominantly rural area of southwest Indiana, and portions of Kentucky and Illinois.

3. WNIN's mission is to provide quality educational, informational and cultural programming with an emphasis on locally produced shows that serve the needs of the citizens of the rural area surrounding Evansville, Indiana. Although WNIN is located in an urban center with a population of about 130,000, it serves a largely rural area with a total population of around 750,000. WNIN produces public affairs programs and documentaries of interest to the local area. The station also produces educational programs and sponsors many community events, including lectures and concerts. WNIN enjoys wide support from individuals and corporations in three states. Although there are other public television stations in the area, there is relatively little duplication between WNIN's programming and that of the other stations. WNIN is a Ready-to-Learn public television station that broadcasts nine hours per day of children's programming. Additionally, WNIN is a community licensee. The other public television stations that overlap with WNIN are state authority or university licensees with substantially different programming. Approximately 10,000 members of the community contribute to WNIN each year.

4. WNIN is a qualified noncommercial educational television station as defined in subsection (l)(1) of Section 5 of the 1992 Cable Act. WNIN is a local station as defined in subsection (l)(2) of Section 5 of the Act with regard to a number of cable ssytems, including Owensboro Cable (Century Communications) in Owensboro and Henderson, Kentucky; Loogootee Cable in Loogootee; Douglas Cable in Allendale, Bone Gap, Browns, Keensburg and West Salem; TCI in Owensville, Mt. Vernon, Princeton, Henderson, Ft. Branch, Poseyville, Jasper, Boonville, Huntingburg, and Haubstadt; Star Cable (PAR) in Evansville, Wadesville, and Poseyville; TeleMedia in Greenriver; MWI Cable in Pleasant Ridge and Montgomery/Cannelburg; and Triax Communications in Shoals, Monroe City and Patoka.

* * * *

8. In February 1991, WNIN was dropped by Loogootee Cable, Loogootee, Indiana (now TeleMedia Co.). At the same time, the cable system added CNN Headline News. Prior to being dropped, WNIN had expended considerable resources to develop its membership in the Loogootee area. The drop resulted in WNIN's loss of service to approximately 100 Loogootee area cable subscribers and over 75 station members. As a result of the drop, the station experienced a revenue loss of about $4,000 per year. In December 1992, after the 1992 Cable Act went into effect, WNIN requested carriage on the Loogootee system. Telemedia declined on the grounds that Loogootee was outside WNIN's coverage area, and

that the system already carried one public television station. After repeated requests from us, the cable company subsequently measured WNIN's signal on a day when WNIN was experiencing transmitter problems, and concluded that the station's signal strength was not sufficient. After repairing the transmitter, WNIN again requested that TeleMedia carry the station. Finally, in December 1993, the cable company added WNIN. Documents relating to the Loogootee drop and subsequent correspondence are attached as Exhibit 4.

* * * *

May 19, 1995

/s/ David Dial
DAVID DIAL

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 3

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF CAROLYN BAILEY LEWIS

1. My name is Carolyn Bailey Lewis. I am the General Manager of Station WNPB in Morgantown, West Virginia. I have been the General Manager of the station since February, 1994. From 1980 to 1994, I held the position of Director of Public Information and Graphic Design at WNPB. As the director of Public Information, I worked closely with the person at WNPB responsible for cable relations.

2. WNPB, Channel 24, was originally licensed in 1969 to the West Virginia Board of Regents and operated under West Virginia University as WWVU-TV. In 1983 the ownership and license were transferred from the Board of Regents to the West Virginia Educational Broadcasting Authority, and new call letters were assigned to the station.

3. WNPB's primary goal is to provide formal and informal education to the citizens of northern West Virginia and surrounding areas. Since its inception, the station has been providing educational programming to schools in the area through the "School Services" initiative. Approximately 65,000 students currently receive the benefits of this service. In addition, over 1,000 persons are currently enrolled in our telecourse offerings.

4. In addition to our school and telecourse offerings, WNPB offers a variety of programs of particular interest to residents of the area. For example, WNPB has been

broadcasting coverage of the West Virginia State Legislature since 1973 and carries weekly one half hour legislative updates every week night during the two-month annual session. WNPB also broadcasts many of the West Virginia University basketball and football games. Finally, we have a number of other specialized locally produced programs, such as *Doctors on Call* featuring West Virginia University's Dean of Medicine, which airs weekly; and *The Law in Your Life*, produced cooperatively with the West Virginia College of Law, which airs monthly. WNPB's locally produced shows have won a number of awards.

5. WNPB is a quaified noncommercial educational television station under the definition contained in subsection (l)(1) of Section 5 of the 1992 Cable Act. WNPB satisfies the definition of a local station contained in subsection (l)(2) of Section 5 of the Act with regard to a number of cable systems, including Helicon Cable (Uniontown, Pennsylvania), Waynesburg Cable (Waynesburg, Pennsylvania), Charter Cable (Bruceton Mills, Brandonville, WV), Wheeling Cable/TCI (Wheeling, WV), Century Cable (Morgantown, WV), Armstrong Communications (Connellsville, Pennsylvania), Bellaire TV Cable Co. (Bellaire, Ohio), Total Cable, Inc. (Farmington, Pennsylvania), Top Cable (Paden City, WV), Triax (Somerset and Mt. Summit, Pennsylvania), CT&R Cable (Petersburg, WV), and Oldtown Community Cable (Cumberland, Maryland).

6. Over the years WNPB has had a number of problems with cable systems dropping its signal or changing its channel position in a way that made it difficult or impossible for some of our viewers to receive our programming. These drops and shifts have resulted in viewer confusion and dissatisfaction. In addition, the WNPB staff has spent significant time and resources in responding to members' complaints about the drops and shifts and mounting campaigns in an effort to reverse the cable

company decisions. Several examples of these cable company actions are described below.

7. In September 1986, the Helicon Cable (d/b/a Ruth Cablevision) system dropped WNPB from its system in Uniontown, Pennsylvania. Uniontown is approximately 25 miles from Morgantown. At the time WNPB was dropped, the cable operator stated that it was upgrading the system and would put WNPB back on the system when the upgrade was finished. However, that did not occur. The system was sold to new owners, and WNPB was not returned to the system until after the enactment of the 1992 Cable Act. Prior to the 1986 drop, WNPB had had a great deal of trouble with the Uniontown cable system dropping its programming sporadically. Even during the period when the first "must carry" rules were in effect, WNPB was never certain of carriage on this system. The cable operator simply carried and dropped WNPB when it saw fit. Exhibit 1 is a document relating to the Helicon/Ruth Cablevision drop.

8. In late 1986, WNPB was dropped by TCI in Waynesburg, Pennsylvania. Although the system had carried WNPB for a number of years, when we asked why we had been dropped, the cable company told us that it simply did not have room for WNPB. WNPB requested carriage pursuant to must carry in 1993, but received a response from TCI that the signal was inadequate. WNPB wrote again to TCI on May 28, 1993 asking for information on the basis of that assertion. WNPB continued to pursue the matter with TCI, in light of the fact that WNPB had been carried on the system for years prior to being dropped without any problems with the signal. However, TCI has not yet carried our station. Exhibit 2 contains a sample of a letter from a Waynesburg viewer and WNPB's May 28, 1993 letter to TCI. Unfortunately, WNPB has not had sufficient resources to pursue reinstatement on the system by filing a complaint with the FCC.

9. In April of 1990 the Charter Cable system in the Bruceton Mills and Brandonville areas of West Virginia dropped WNPB. As a result of this drop, and because over-the-air receipt of WNPB programming is not satisfactory, the station was unable to fulfill its paid contract to provide services to the Preston County school system and to provide services to adult students enrolled in college credit telecourses. The drop also disrupted WNPB's participation in an important literacy project with the local newspaper. After about a week of strong protests by viewers and the station, WNPB was returned to the Bruceton Mills and Brandonville systems. Exhibit 3 is a document relating to the Charter Cable drop.

10. WNPB's cable channel position was also shifted on various occasions, with negative consequences for the station and its viewers. Perhaps the most disruptive shift occurred in Wheeling, West Virginia, in early 1987. Previously WNPB had been carried on Channel 8 in Wheeling. The Wheeling Cable Co. (owned by TCI) decided to move WNPB to Channel 20. At that time, the cable company assured WNPB that it would make available as many converters as necessary to ensure that viewers could continue to receive WNPB programming. Unfortunately, the converters were not available for many months, and a number of our viewers wrote to the station complaining of reception problems. In the months after the shift, WNPB lost a large number of viewers, as reflected in the amount of membership revenue we collected from the Wheeling area. When WNPB held its March pledge drive in 1987, we suffered a 46% drop in membership and a 36% drop in revenue from the Wheeling area compared to the 1986 figures. While our membership and revenue were down on average in the 1987 March membership drive (approximately 18% for membership and 3% for membership dollar revenue), the membership and revenue drops in Wheeling were significantly greater than the overall decrease. Exhibit 4 includes documents concerning the Wheeling shift and its effect on the station, including

some sample letters from viewers and a letter the station manager sent to Senator Byrd about the situation.

11. Another channel shift that affected WNPB and its viewers significantly was a shift in Morgantown in April of 1990. On Thursday, April 5th, Century Cable, in the middle of the afternoon, with no advance warning, shifted WNPB from Channel 8, where it had been for 21 years, to Channel 24. In place of WNPB, the cable system put the Nashville network (TNN) on Channel 8. This shift occurred in the midst of WNPB's instructional television schedule, leaving nearly 4000 students without any access to WNPB instructional programming. Only a few of the 500 television sets used throughout the Morgantown classrooms had the converters necessary to receive the higher channel. The hundreds of clasrooms without converters lost our programming, despite the fact that the Monongalia Board of Education had already paid for these services. The channel shift also inconvenienced many adults who had paid to enroll in telecourses through West Virginia University and Fairmont State College.

12. I and others worked very hard on a campaign to reverse the Century Cable decision. After a week of strong protests by our viewers, government officials, and by WNPB itself, the cable company agreed to put the station back on Channel 8 "temporarily." This raised the possibility that WNPB could be shifted again at will. While this did not occur, we would certainly be at constant risk if the must carry rules were not in effect. The station manager at the time wrote to members of the West Virginia congressional delegation to urge passage of must carry legislation, citing the Century Cable shift as a prime example of why we needed the protection. Exhibit 5 includes documents relating to the Century Cable shift, including some of our letters to Congress.

13. Since the current must carry provisions went into effect, WNPB has requested carriage on a number of cable systems. WNPB has been added to the following

systems; Armstrong Communications in Connellsville, Pennsylvania; Bellaire TV Cable Co. in Bellaire, Ohio; Helicon Cable in Uniontown, Pennsylvania; Total Cable, Inc. in Farmington, Pennsylvania; Top Cable in Paden City, WV; Triax in Somerset and Mt. Summit, Pennsylvania; CT&R Cable in Petersburg, WV; and Oldtown Community Cable in Cumberland, Maryland. Several cable systems (for example, the TCI system in nearby Mt. Morris, Pennsylvania, and the Time Warner Dimension system in Washington, Pennsylvania) have denied carriage, but we have not had sufficient station resources to file complaints with the FCC to press those requests.

* * * *

May 19, 1995

/s/ Carolyn Bailey Lewis
CAROLYN BAILEY LEWIS

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS' MOTION FOR SUMMARY JUDGMENT

VOLUME 3

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DENNIS MALLOY

1. My name is Dennis Malloy. I am Director of Community Relations and Development for Iowa Public Television ("IPTV"), Des Moines, Iowa. I have held that position since 1988. My duties include coordination of individual and corporate fundraising, public information and congressional liaison activities, and maintaining relations with cable companies. During 1986 and 1987, I held the position of program planner at IPTV, working on fundraising for a capital campaign, grants from foundations and businesses, and a PBS project.

2. IPTV is a noncommercial state educational television network affiliated with the State of Iowa. IPTV operates the following stations: KDIN, Des Moines; KBIN, Council Bluffs; KTIN, Fort Dodge; KIIN, Iowa City; KYIN, Mason City; KHIN, Red Oak; KSIN, Sioux City; and KRIN, Waterloo. IPTV began operations in 1969.

3. IPTV is currently funded approximately 60 percent by the State of Iowa, 10 percent by the federal government, 20 percent by membership contributions, and 10 percent by corporate and foundation underwriting. IPTV raises money through the Friends of Iowa Public Television and the Iowa Public Television Foundation, both of which are non-profit organizations. Over the past few years, membership contributions have become a more important source of revenue for IPTV because state funding has not increased fast enough to keep up with the increasing costs of operating.

4. The programming for the IPTV stations originates from Des Moines. This programming includes PBS programs and programs generated by the Central Educational Network, the American Programming Service, and BBC Lionheart, as well as independently produced programming. We present daytime in-school instructional programming, and several thousand students currently receive college level instruction through IPTV. IPTV produces over 100 hours of original local programming each year, including seasonal coverage of Iowa-based activities such as the Iowa State Fair. All IPTV stations carry the same programming.

5. KDIN, KBIN, KTIN, KIIN, KYIN, KHIN, KSIN and KRIN are all qualified noncommercial educational television stations as defined in subsection(l) (1) of Section 5 of the 1992 Cable Act. The IPTV translator in Ottumwa (Channel 33) is a local station as defined in subsection (l)(2) of Section 5 with regard to the cable system in Bloomfield, Iowa; KBIN, Council Bluffs, is a local station as defined in subsection (1)(2) of Section 5 with regard to the cable system in Tabor, Iowa; KIIN, Iowa City, is a local station as defined in subsection (1)(2) of Section 5 with regard to the cable systems in Rock Island, Milan, Aledo, Coal Valley, and Monmouth, Illinois, and Farley, Epworth, Dyersville, and Cascade, Iowa; KSIN, Sioux City, is a local station as defined in subsection (1)(2) of Section 5 with regard to the Sooland cable system in Sioux City, Iowa.

6. During the 1987-1992 period, several cable systems shifted IPTV's network stations. In mid-1987, without notice, TCI shifted KIIN's channel position from 12 to 18 in Farley, Epworth, Dyersville, and Cascade, all in Dubuque County, Iowa. ESPN was placed on channel 12 in place of KIIN. The hilly topography of the county made it difficult to receive a good picture over the air in some areas. Although the cable company offered to install converters so that subscribers could receive channel 18,

some of our viewers were still upset. We persuaded TCI's Dubuque cable manager to appeal to headquarters to shift KIIN back to channel 12, but headquarters refused to do so. The shift affected viewer contributions from the Dubuque area. I recently reviewed records from the March 1987 and 1988 pledge drives, broken down by county. After our March 1988 pledge drive, we calculated that, while viewer pledges had gone up statewide by approximately 16 percent, there was no increase in the number of pledges in Dubuque county. We could see no reason for this difference other than the shift to a higher channel. Exhibit 1 includes documents relating to the 1987 Dubuque County shift and eventual restoration and documents reflecting my calculations relating to contributions from Dubuque County and the entire state.

7. In late 1988, with no advance notice, Sooland Cablecom in Sioux City, Iowa (with approximately 17,000 subscribers, operated by Post-Newsweek) shifted KSIN from channel 11 to channel 9 in order to make room for a classified advertising channel. This created significant problems for our viewers due to interference from a local VHF broadcast station on channel 9. The cable company agreed to install filters for our viewers, in an effort to eliminate the interference. When viewers continued to complain, we did a survey of our Sioux City members in the summer of 1989. Approximately 30 percent of those surveyed who watched IPTV via cable said they continued to have poor reception of KSIN. Sooland refused to move KSIN back to channel 11 until after the must carry provisions went into effect. Even then, the cable company delayed the move for many months, with a variety of excuses. Finally, KSIN was restored to channel 11 in December 1993. Exhibit 2 contains documents relating to the Sooland shift.

8. In January 1989, Centel Cable TV of Iowa (later WestMarc/TCI) shifted KIIN from channel 12 to channel 3 in Bloomfield, Iowa, without any advance notice. This was done in order to move the Nashville network

(TNN) from channel 3, where it had experienced interference. Our viewers in Bloomfield (including the public schools, which used our programs for classroom purposes) began to complain about reception problems. In a phone survey of our members in Bloomfield, we learned that about half of those we reached were experiencing reception problems after the shift. The cable company attempted to correct the problem, but I believe it was unsuccessful in doing so. The situation was finally resolved by a channel position move after the must carry provisions went into effect. Exhibit 3 includes documents relating to the Bloomfield shift.

9. IPTV stations were also dropped by some cable systems. For example, in 1986, KBIN was dropped by Midlands Cable in Tabor, Iowa. The station was eventually restored to carriage, but not until 1988. In 1987, Group W Cable (now TCI) (with 15,000 to 20,000 subscribers at the time) dropped KIIN in the Quad Cities area, which included Rock Island, Milan, Aledo, and Coal Valley, Illinois. We did not succed in having the station restored until 1993, after must carry had gone into effect. Exhibit 4 includes documents relating to the Quad Ciites drop (as well as several other cable actions) and IPTV's efforts to be restored to the Quad Cities system. We were even dropped by a cable system after the must carry provisions went into effect. In late 1993, TCI dropped KIIN in Monmouth, Illinois. We complained, and, eventually, KIIN was restored, but only after considerable delay. TCI finally restored carriage of KIIN in late December of 1991. Exhibit 5 includes documents relating to the Monmouth drop and restoration.

10. These drops created significant problems for IPTV. Viewers complained about losing access to the station, and they let us know that they would not continue to make financial contributions if they could not receive our programming. *See* Exhibit 5. IPTV records indicate that the 1993 TCI Monmouth drop (involving about 2,000

cable subscribers) resulted in a loss of 34 percent of our membership in that area in less than a year. *See* Exhibit 5. Based on IPTV's average gift, this loss in membership apparently entailed a loss of more than $1,700 to IPTV in a single year.

* * * *

May 19, 1995

/s/ Dennis Malloy
DENNIS MALLOY

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS' MOTION FOR SUMMARY JUDGMENT

VOLUME 3

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF STEVEN K. MEUCHE

1. My name is Steven K. Meuche. I am General Manager of WKAR in East Lansing, Michigan. I have been employed in public broadcasting at Michigan State University since 1965 and have had management responsibility for WKAR since 1987.

2. WKAR, Channel 23, is a noncommercial educational television station licensed to the Board of Trustees of Michigan State University. WKAR, the second oldest public television station in the country, went on the air in January 1954, serving an area with a population of more than 2 million people in and around Lansing, Michigan. Over 16,000 members of the community contribute to WKAR each year, and 60 percent of our operating income is in the form of contributions from our members and underwriting donors.

3. WKAR plays a leading role in providing public programming in the State of Michigan. WKAR's programming includes coverage of state government activities, documentaries and discussions of community concerns, documentary programs on Michigan issues, MSU athletic events and other university activities, and a variety of cultural, public affairs, and children's programs. WKAR broadcasts approximately 125 hours per year of locally produced programming (not including fundraising hours). WKAR has won local, state, national and international awards for its programming and community activities.

4. WKAR also uses its facilities to offer a number of other instructional and educational activities. For ex-

ample, each year WKAR produces two middle school mathematics courses, which are taught in a live, interactive mode and broadcast via our satellite uplink to 140 sites in five states. Each year the station also produces and transmits four to six advanced engineering courses, which are distributed nationally to engineers via the Michigan Information Technology Network and the National Technological University.

5. WKAR is a qualified noncommercial educational television station as defined in subsection (l)(1) of Section 5 of the 1992 Cable Act. WKAR is a local station as defined in subsection (l)(2) of Section 5 of the Act with regard to a number of cable systems, including Columbia Cable, in Ann Arbor and Ypsilanti, MI; Wolverine/WestMarc/TCI, Battle Creek, MI; Cablevision, Alma, MI; Comcast, Flint, MI; Crystal Cable Television, Crystal, MI; C-Tec Cable Systems, Durand, MI; Bridgeport-Frankenmuth Cable (formerly Cable Equities of Colorado), Bridgeport/Frankenmuth, MI; Fenton Cablevision, Fenton, MI; Concord Telecommunications, Oxford, MI; Cox Cable Saginaw, Saginaw, MI; TCI Cablevision of Greater Michigan, Chesaning, MI; TCI Cablevision of Greater Michigan, Montrose, MI.

6. During the 1986-1992 period, several Michigan cable systems dropped WKAR. In each case the station received no advance notice. In the spring of 1986, Columbia Cable, which served Ann Arbor and Ypsilanti, dropped WKAR and replaced it with a local commercial station. I have attached as Exhibit 1 correspondence regarding this drop. Columbia Cable restored WKAR to carriage some time in 1991, after the system was rebuilt. In 1990, when we were off the system in Ann Arbor, we had only 19 Ann Arbor contributors. In 1994, when we were on the system again, we had 207 Ann Arbor members. Based on our approximate average member renewal contribution of $65 per year, I estimate that WKAR lost approximately $13,000 per year as a result of the Ann Arbor drop. If one assumes that some of these members

were new contributors, based upon the approximate average new contribution amount of $90, the loss would be even greater.

* * * *

7. Cable systems in Alma and Flint also dropped the WKAR signal in 1986. A number of our viewers in those areas told us they would no longer contribute to our pledge drive because they could not access WKAR. I have attached as Exhibit 2 sample notes I received from viewers following these drops. WKAR was picked up by these systems prior to or due to the must carry requirements in 1992.

8. In February 1987, Wolverine Cable (subsequently WestMarc Cable Group and currently TCI Cablevision of Greater Michigan), in Battle Creek, Michigan, dropped WKAR when the system decided to carry a superstation, WTBS, and to cut back to one public television station (the Grand Rapids station). This drop alone resulted in a loss of access by 22,000 cable customers. See Exhibit 3 for correspondence relating to this drop. Again, a number of viewers advised us that they would not send contributions because they could no longer receive the station. Copies of letters from former viewers are attached as Exhibit 4. This station was subsequently carried again by Wolverine.

May 19, 1995

/s/ Steven K. Meuche
STEVEN K. MEUCHE

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 3

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF VIRGLE SMITH

1. My name is Virgle Smith. I am the General Manager of Station KRSC-TV in Claremore, Oklahoma. I have been the General Manager of the station since March, 1992. Prior to that I was Vice President of Sales and Affiliate Services for United Videos, Inc. and Preview Guide in Tulsa, Oklahoma.

2. KRSC, Channel 35, is a UHF non-commercial educational television station licensed to Rogers State College. KRSC (previously known by the call letters KXON) began broadcasting in 1987, serving northeastern Oklahoma and part of Kansas.

3. Unlike many noncommercial educational stations, KRSC is not a member of PBS and shows little PBS programming other than educational telecourses provided through Adult Learning Satellite Services. Almost half of KRSC's programming is locally originated programs of particular interest to the citizens of Oklahoma. This includes educational telecourses originating from Rogers State College and "live" interactive educational programming to 21 area high schools. Nineteen of our 50 telecourse series are original KRSC productions. The college offers four associate degree programs via television to over 3,500 student enrollments annually. KRSC also presents locally produced programs on subjects such as consumer affairs, Native American matters, humanities, writing, and local sports. In 1994, KRSC produced over 1,300 hours of original local production programming,

divided between general audience programming and educational production. In 1995, we have already reached 1,400 hours of local production.

4. Through mutual agreement, KRSC's programming does not in any way duplicate that of KOED, a public television station located in Tulsa. Unlike KRSC, KOED is part of the state public television network and is a PBS member. KRSC is the only Oklahoma television station to broadcast programming from the Narrative Television Network, a voice-over narrative service for the benefit of visually impaired viewers. We will implement both open and closed captioned programming in the fall of 1995.

5. KRSC is a qualified noncommercial educational television station as defined in subsection (l)(1) of Section 5 of the 1992 Cable Act. KRSC is a local station as defined in subsection (l)(2) of Section 5 of the Act with respect to the cable systems listed in Exhibit 1.

6. Prior to the enactment of the 1992 Cable Act, KRSC personnel made efforts to obtain carriage on cable systems serving communities within our coverage area. Several letters and memoranda reflecting these efforts are attached as Exhibit 2. The station met with only limited success. By 1992, within our Grade B coverage area, KRSC was carried full-time by cable systems serving 14 communities and part-time by one cable system (TCI) serving Tulsa. All of the systems on which KRSC was carried full-time were small, serving on average fewer than 500 subscribers. KRSC suffered particularly from its lack of full carriage in the Tulsa area. Downtown Tulsa is only 25 miles from Claremore. Prior to 1993, KRSC was carried only on a limited, part-time basis by TCI in Tulsa. In this period, therefore, only a limited number of cable subscribers in Tulsa had any access to KRSC's educational programming.

7. Shortly after must carry went into effect in 1992, KRSC requested carriage on a number of cable systems

that were within either the station's Grade B coverage or the 50-mile limit contained in the Act. On April 13, 1993, I wrote to 13 cable MSOs requesting carriage on their systems in more than 60 towns. Some of the cable systems agreed to carry KRSC with only a small amount of prodding. However, the station ran into significant resistance from other systems. A number of systems did not respond or denied carriage without a good reason. Copies of some of my correspondence with TCI regarding carriage on the Tulsa system and several others are attached as Exhibit 3. It took a relentless campaign, including a number of letters and months of discussions and delays before some of the cable systems agreed to carry KRSC. Eventually, most of the systems agreed to carry KRSC, but only after considerable delay. For example, it took about 18 months of negotiations before we obtained carriage on the TCI system in Muskogee. We are currently carried on all cable systems within our coverage area.

8. Today, cable companies serving approximately 72 communities and cities carry KRSC. This is roughly a 500 percent increase in the number of cable systems carrying KRSC in the three years since passage of the Act. A complete listing of the cable systems that currently carry KRSC is attached as Exhibit 1. The station has benefited particularly from gaining access to significant urban areas, including Bartlesville (serving approximately 10,000 subscribers), and the remainder of Tulsa on a full-time basis. I estimate that approximately 5,000 cable subscribers were able to receive KRSC on a full time basis prior to must carry. At this time almost 250,000 cable subscribers have access to KRSC educational programming on a full-time basis.

9. The additional cable carriage KRSC has obtained since 1992 has had a direct and significant financial impact on the station. Since must carry went into effect, the station has gained at least 20 new underwriters and underwriting revenues have approximately tripled. This in-

cluded Coca-Cola—the first national underwriter the station had ever had. Several of our new underwriters are Tulsa-based companies that received their first exposure to KRSC after Tulsa Cable (TCI) provided full carriage pursuant to must carry. Prior to 1992, annual underwriting revenues were in the $15-20,000 range, at best. In 1994, the station received approximately $50,000 in underwriting revenue. We are investing the new revenue in equipment and programming, particularly new educational programming production.

10. KRSC does not actively seek individual members or donations from individuals. However, our addition on many new cable systems has resulted in some increase in individual contributions. For example, the station has received a couple of donations in the $500 range. It had received only small donations previously.

11. From my perspective, more important than the increase in revenues has been the increased recognition and programming opportunities that have resulted from new cable carriage. We have received many letters praising our "made in Oklahoma" programming. Other universities and public schools have expressed interest in having KRSC provide local programming. Other groups have come to us with programming proposals. For example, the Tulsa Philharmonic recently asked KRSC to provide live broadcasts of its performances. I believe increased cable carriage is the sole reason for these changes.

12. The addition of KRSC on cable systems has also had a direct impact on the number of students able to receive its educational programming Although KRSC has a strong UHF signal, many high schools were not receptive to participation in our distance learning program until the station was placed on local cable systems. This program contains satellite-fed courses and locally-instructed classes for both high school and college level students in areas such as sociology, computer science, English composition, and psychology. It also includes a nursing program. None of these courses are available on

a local level. Additional exposure to the new cable audience helped us gain support for the program. Approximately seven schools have been added to the distance learning program each year since must carry went into effect. Currently several hundred high school students at 21 sites are earning college credit through this concurrent educational program. The expansion of distance learning opportunities is particularly important in Oklahoma, where the level of local and state education funding is extremely low.

13. The additional revenue and publicity generated as a result of new cable carriage have enabled KRSC to increase its hours of operation. Two years ago the station operated from 7:30 a.m. to 10:00 p.m. Now it operates until midnight and is considering extending its hours further in order to offer a midnight college program. We will increase our current broadcast of six hours daily of live interactive programming to 10 hours daily in the fall of 1995.

14. If the must carry provisions were repealed, I believe there would be serious damage to KRSC. Some of the cable systems that have added us since 1992 may have concluded that the demand for our station is high enough that it is in the system's best interest to keep KRSC. However, the stonewalling and delays KRSC experienced from some cable systems when we asserted our must carry rights, as well as my own experience in the cable business, convince me that most systems will drop KRSC given the chance. The KRSC area is approximately 55 percent cabled. Thus, any drop by a cable system would likely result in a decrease in audience and corresponding drops in revenues. In addition, it would diminish our ability to satisfy KRSC's mission of providing high quality educational programming to the people in our coverage area, and likely would limit our implementation of new programs.

May 19, 1995

/s/ Virgle Smith
VIRGLE SMITH

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS' MOTION FOR SUMMARY JUDGMENT

VOLUME 2

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DANIEL ALPERT

1. My name is Daniel Alpert. I am the Senior Vice President and Assistant General Manager of WTVS, located in Detroit, Michigan. My position, which I have held since October, 1982, includes responsibility for government and cable relations. I have been with WTVS for approximately 18 years.

2. WTVS, Channel 56, is a noncommercial educational broadcast television station licensed to the Detroit Eduactional Television Foundation. Over 95,000 members of the community contribute to WTVS each year.

3. WTVS provides a unique 24-hour-a-day service that is geared towards meeting the needs and interests of viewers in the Detroit area. WTVS concentrates its programming efforts on urban issues of race and urban youth. For example, we show weekly *Detroit Black Journal* and *Back to Back*, which address current issues facing Detroit. We also offer programs like Project Literacy to teach adults to read and Project Graduation to develop drug and alcohol-free teen parties. In addition, WTVS leads the City for Youth campaign which is a partnership of over 400 organizations including youth services agencies, educators, religious institutions, businesses and the media in a united multidimensional effort (including programming) to improve the future of young people locally and beyond in Michigan. This campaign has been so successful that it has spread to other areas of the country.

4. WTVS is a qualified noncommercial educational television station as defined in subsection (1)(1) of Section 5 of the 1992 Cable Act. WTVS is a local station as de-

fined in subsection (1)(2) of Section 5 of the Act with regard to United Cable, Lincoln Park; United Cable, Oakland County; Continental Cable, Dearborn Heights; Booth Communications, Birmingham; and Liberty Cable (later WestMarc), Adrian.

5. During the 1986-1992 period, several Michigan cable systems shifted WTVS' channel position without notice. Many cable systems originally carried WTVS on channel 6. In August 1986, without warning, United Cable in Lincoln Park shifted WTVS from channel 6 to channel 51. Subsequently, after subscribers complained that they had to pay extra for new converter boxes to receive cable channel 51, that system repositioned us to channel 26. Then, in January 1987, United Cable in Oakland County (with 90,000 subscribers) shifted WTVS from channel 6 to channel 56 and placed CNN, in which it had an ownership interest, on channel 6 in place of WTVS. In mid-1988, Comcast in Sterling Heights, shifted WTVS from channel 3 to channel 23, and Booth Communications in Birmingham shifted us from channel 6 to channel 20. I have attached hereto as Exhibit 1 several documents relating to these shifts, including the Cable System Broadcast Signal Carriage Survey 1 filed at the Federal Communications Commission on behalf of WTVS in June 1988 describing the shifts.

6. After the United Cable shifts in 1986 and 1987, I contacted the cable managers and attempted to have them restore WTVS to channel 6. In both cases, the manager declined, noting only that this was a "corporate decision" and that "we have a business to run." I understood these comments to mean that the replacement programming provided the system with the opportunity for increased local advertising revenue, while a public television station did not. I also believed that United Cable placed CNN on a lower channel to give it higher viewership, allowing the cable company to maximize its investment in the network. I believe this is consistent with a

general cable industry practice of placing a cable programmer, in which it has a financial interest, on a low channel and placing advertising on that channel. After we helped launch cable systems by being an initial selling point to consumers, the cable operators were now shifting public television stations at will without regard to the public interest.

7. Following the return of must carry in 1992, I undertook a campaign to enforce WTVS' right to its original position on channel 6. It took a number of months of correspondence and calls before cable companies complied with the statute. Eventually, however, we obtained placement on channel 6 in the United Cable (now TCI) systems in Oakland County and Lincoln Park. *See* Exhibit 2 for correspondence relating to this effort. Comcast of Sterling Heights also reinstated WTVS to Channel 3.

8. While pursuing the above reinstatements, I also became aware for the first time that in July 1993, Continental Cable of Dearborn Heights had at some previous time shifted WTVS from channel 6 to channel 56, giving the more favorable placement to TBS. We were able to recover our position on channel 6 after we invoked the must carry rules. *See* Exhibit 3. The United Cable and Continental Cable shifts affected 150,000 subscribers. Thanks to must carry, the WTVS viewers in these homes were able to find WTVS more easily.

* * * *

12. A major loss came in January, 1987, when WTVS was dropped by the Comcast system in the greater Flint area, with around 75,000 subscribers. While we initially accepted the cable company's contention that it was not obligated to carry WTVS, we do believe that Flint and the Comcast headend are within WTVS' Grade B. In January, 1988, Communivision, a smaller system in Flint and Grand Blanc, also dropped WTVS. We have been unable to persuade the cable companies to put us back

on the system. Because of the "UHF handicap," and because cable subscribers often lack a working outdoor antenna, most of our former viewers in Flint can no longer receive the WTVS signal. Exhibit 4 includes correspondence relating to the Adrian and Flint drops.

13. It is difficult to quantify precisely the effects of the drops and shifts WTVS has experienced. In general, we do not have the resources to track this sort of information with any specificity. * * * * Also, a comparison of pledges to our March 1986 and March 1987 on-air fundraisers shows a 13 percent drop in the number of pledges. I believe this is at least partially the result of the combined effects of the United Cable shifts and the Comcast drop in Flint. With respect to the Flint drop, I have records that report more specific information. When WTVS was dropped from cable systems in the Flint-Grand Blanc area, 489 households were donating an average of $70 each to our public television station's operating fund. After the drops, WTVS lost 90 percent of the Flint-Grand Blanc area donors and, as a result almost $31,000 a year of donations. At present, we have only 49 active donors in that area. Of course, a more significant effect was that thousands of viewers who had benefited from WTVS' public affairs and other programming lost access to that programming.

* * * *

May 22, 1995

/s/ Daniel Alpert
DANIEL ALPERT
Senior Vice President and
Assistant General Manager, WTVS

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 2

(STATION WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DAVID HOSLEY

1. My name is David Hosley. I am General Manager of KCSM, a public television station located in San Mateo, California. I have held the position of General Manager since October, 1992. From June, 1990 to August, 1992, I held the position of Vice President/ General Manager at KQED, a public television station located in San Francisco, California. Prior to that, I was Station Manager at KQED-FM from August, 1987, to May, 1990.

2. KCSM, Channel 60, is a noncommercial educational broadcast television station licensed to the San Mateo County Community College District. KCSM first went on the air in October 1964, serving the San Francisco-Oakland-San Jose market. Over 27,500 members of the community contributed to KCSM during the past year.

3. KCSM's primary activity is to broadcast college-credit telecourses for the San Mateo County Community College District and eight San Francisco Bay Area community colleges. KCSM broadcasts approximately 44 telecourses each semester. Approximately 45 percent of our 21-hour broadcast day is devoted to college credit telecourses. These telecourses are offered by the College of San Mateo and eleven other colleges in the nine county Bay Area. KCSM broadcasts lower division college-credit telecourses, all of which are transferable to other community colleges and to four-year colleges and universities.

4. Because telecourses meet the same requirements as on-campus traditional courses, students can use telecourses to begin, continue, or complete their college education at home or work. KCSM sees its role as a fourth campus of the San Mateo County Community College District. The broadcast of educational telecourses to supplement on-campus classes and training is particularly important due to the decreasing levels of state funding for education in California.

5. With the growing population of minorities and single mothers in the San Francisco Bay Area, KCSM continues to increase its programming targeted to these groups. KCSM is responding to these needs not only with its college credit telecourses, but with its general educational programming as well. To accomplish this goal, the Program Director and other station management work closely with the station's Community Advisory Committee to identify relevant issues for program production and broadcast. KCSM produces more local programs than any other public television station in California.

6. There is no significant duplication of educational programming offered by KCSM in the San Francisco area. KCSM works very hard to differentiate itself from the other public television stations. As explained above, almost half of KCSM's programming consists of telecourses, almost all of which are unique to KCSM. In addition to locally produced programs, KCSM provides viewers with high quality PBS and syndicated programming. However, KCSM offers most of its nationally distributed programming on an eight-day delay from the PBS scheduled feed. Additionally, KCSM continues to seek ways to differentiate its services, such as providing services to people who speak English as a second language and those who want to learn foreign languages.

7. KCSM is a qualified noncommercial television station as defined in subsection (l)(1) of Section 5 of the

1992 Cable Act. KCSM is a local station as defined in subsection (l)(2) of section 5 of the Act with regard to 52 headends of cable systems in the San Francisco Bay area, including the cable systems discussed in this declaration.

8. Many of the adverse carriage actions KCSM suffered occurred before I joined the station. However, I am generally familiar with those actions and their effects on the station, through my review of station records and of records sent by station personnel to the Association of America's Public Television Stations, and through knowledge I have gained through staff members who were with the station prior to 1992.

9. A large number of cable systems dropped KCSM after the must carry rules were struck down. Two major sets of drops from Viacom systems were particularly harmful to the station. (Viacom is also known as Tele-Vue Systems and as Television Signal Corporation in certain areas.) Initially, in 1986, Viacom dropped KCSM from several of its systems, including its large San Francisco system. This occurred in the summer, shortly before the fall semester was to begin. Then, in 1989, Viacom dropped KCSM in the North Bay region, including Marin County, American Canyon and Napa in Napa County, Pinole and Pittsburg in Contra Costa County, and Dublin in Alameda County. I have attached several letters and a newspaper article discussing the 1986 Viacom drops as Exhibit 1. I have attached materials discussing the 1989 Viacom drops as Exhibit 2.

10. Each of the two sets of Viacom drops left KCSM seriously weakened. Many viewers could no longer access KCSM's programs, including its for-credit telecourses. The 1986 Viacom drops led to the loss of approximately half of the paying enrollment for the station's telecourses. Other viewers who were not enrolled for course credit also lost the opportunity to benefit from the telecourses.

The 1989 drops also had a sharply negative impact on KCSM, particularly in Marin County. Following the 1989 drops, KCSM fell from the second largest public television station in the San Francisco market to the third largest in the market. The two sets of Viacom drops resulted in KCSM's loss of service to more than 200,000 cable subscribers.

11. In addition to the Viacom drops, KCSM was dropped from a number of other cable systems in the late 1980s and early 1990s. Concord Cable in Concord, TCI in San Mateo and Millbrae, and the Televents system in Martinez dropped the station in 1986. In 1988, KCSM was dropped by United Cable Television in Foster City, and by Tele-Vue Systems in Livermore. In 1989, several TCI Cablevision systems (including Hayward, San Leandro, and Castro Valley) dropped KCSM. In September 1989, Bay Cable dropped the station in Berkeley. In 1990, KCSM was dropped by Contra Costa Cable in Pinole; by Crockett Cable Systems in Crockett; and by Tele-Vue Systems in Petaluma. In 1991 KCSM was dropped by Televents of East County in Brentwood and by Post-Newsweek Cable in Union City.

12. As a result of the drops, KCSM experienced large revenue losses. The station lost a number of members, particularly in the San Francisco and East Bay areas. For example, a memorandum in station files, which was forwarded to APTS, indicates that the two sets of Viacom Cable drops alone caused KCSM a loss of approximately 2,000 members and a revenue loss of $90,000 a year. See Exhibit 3 to this declaration, which describes these revenue effects and other difficulties KCSM had experienced as a result of the drops. Material we forwarded to APTS indicates that the Televents (Martinez) drop cut us off from 12 to 15 percent of our East Bay supporters. See Exhibit 1.

13. While the station's loss of revenue was very significant, the greatest loss resulting from the drops KCSM

experienced was the loss of access by cable viewers to the station's unique instructional programming. For many Bay Area students, especially working adults, women, and minorities, television instruction offers an opportunity for diversified course experiences. This instructional programming is a cost effective means of earning college credits. It also provides opportunities for students who otherwise would be unable to attend traditional in-class courses, and provides viewers with an opportunity for active learning. Finally, it responds to the increasing educational needs of diverse population groups. When KCSM was dropped, viewers did not have access to these resources, sometimes losing courses in mid-semester.

14. At the time I arrived at KCSM in October 1992, the station was in very weak financial condition and in danger of being shut down. I perceived a need for various changes, including extending the reach of the station by obtaining carriage on a number of cable systems. Citing the new must carry statute, I requested carriage on a number of cable systems within a 50-mile radius. As a result of these requests, KCSM was restored on several systems that had dropped us earlier, such as Contra Costa Cable and Crockett Cable.

15. While some systems granted carriage reasonably promptly, others resisted, generally without a valid reason. Viacom in particular refused to carry KCSM on many of its systems. KCSM filed several complaints with the Federal Communications Commission against Viacom and various other systems. In 1993, the FCC ordered the following systems to carry KCSM: Chambers Cable (Novato), Coast Cable-Western Communications (San Jose), Horizon Cable TV Video Engineering (Fairfax), Post-Newsweek Cable (Union City); Televents (Brentwood); Viacom (San Francisco). Viacom eventually agreed to carry KCSM in several communities, and some of our complaints were dismissed on that basis. But Viacom continued to resist carriage on other systems. In December, 1994, the Commission ordered Viacom to carry KCSM on various systems in the East Bay area. Copies of documents relating to KCSM's efforts to obtain carriage on various Viacom systems are attached as Exhibit 4.

16. KCSM requested carriage on TCI Cablevision in Sunnyvale in May 1993 and Fremont in September 1993. Despite numerous requests, TCI failed to respond until after the station filed a petition with the FCC. TCI finally added KCSM in Sunnyvale and Fremont in February, 1994. I have attached several documents relating to these requests as Exhibit 5. Even though I requested carriage on numerous cable systems shortly after the must carry statute went into effect, it was not until late 1994 that the station was finally granted carriage on all the systems.

17. Since July 1993, KCSM's audience has doubled, now totaling approximately 484,000 households. The station's membership has also doubled, growing from 12,500 contributors in January, 1993 to 27,500 contributors in May, 1995. Enrollment in our telecourses has increased significantly. While other changes have contributed to this growth, I believe that the must carry laws were a major factor. Our ability to increase our audience through access to a large number of new cable subscribers has been instrumental in allowing us to reach more potential contributors. Our increased audience and revenue have allowed us to produce more local programs.

18. If must carry laws were repealed, I believe there would be severe damage to KCSM, including a loss in the ability to serve a broad population of students in the Bay Area. I believe we would soon lose 25 percent or more of our members, which in turn would result in a revenue loss of approximately $300,000. Particularly in view of the decreasing levels of state education funding

in California, this would be a serious blow. Because of terrain limitations in the area, cable is a very important way for the station to reach viewers. Without must carry, KCSM's services would likely become marginal, and the station would again face the possibility of closing its doors.

May 22, 1995

/s/ David Hosley
DAVID HOSLEY

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.B

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF ELDON J. HAAKINSON

I, ELDON J. HAAKINSON, declare as follows:

1. I am the Acting Chief of the Telecommunications Planning and Analysis Services Group of the Institute for Telecommunications Sciences (ITS). ITS is the research branch of the National Telecommunications and Information Administration in the United States Department of Commerce. The group I supervise plans telecommunications systems for other federal agencies and recommends criteria for such systems. My group also provides telecommunication systems performance models and analyses for use by federal agencies and private parties, including consultants to the broadcast television and cellular telephone industries. I am receiving no compensation for my testimony or work in this case other than my regular ITS salary.

2. I received a Bachelor of Science degree in Electrical Engineering from the University of Colorado in 1965 and a Masters degree in Electrical Engineering from the Polytechnic Institute of Brooklyn (now New York Polytechnic Institute) in 1996. Between 1965 and 1972 I was employed at Bell Telephone Labs in New Jersey, where I worked on development of advanced radars.

3. I have worked at ITS since 1972. During more than 20 years at ITS, I have frequently studied the effects of signal propagation (i.e. transmission) problems on performance of radio systems (including broadcast television), which involved measuring radio channel characteristics, reducing and analyzing measured data, and developing computer models. My most recent work at

ITS primarily has been the evaluation of complete telecommunication systems for their ability to meet user requirements and satisfy environmental constraints, such as policy, technology, and regulations. In 1994, I received the Department of Commerce Bronze Medal Award for technical contributions for development of strategic telecommunications plans.

4. In 1994, I was appointed United States chairman for the International Telecommunications Union—Radiocommunications (ITU-R) (formerly CCIR) Study Group 3, on Radiocommunication Propagation. The ITU is the agency of the United Nations charged with establishing international standards for radio and telephone systems. Since 1993 I have served as the international chairman for the group's Working Party 3K on Land Mobile and Terrestrial Broadcasting Propagation issues, which develops models for analyzing radio signal propagation.

5. I have published numerous reports on telecommunication propagation issues, including reports related to signal propagation standards. A list of my publications is attached to this report as Exhibit A.

6. The defendants in this case have asked me to analyze the ability of cable subscribers to obtain, through the use of input selector devices ("A/B switches"), over-the-air reception of broadcast signals not carried on cable television.

7. This declaration states my opinions regarding the ability of cable subscribers to obtain, through the use of input selector devices, over-the-air reception of broadcast signals not carried on cable television. My opinions are based upon my research and experience in the field of telecommunications propagation. In preparing this declaration, I have relied upon my review of consumer publications, economic, technical and other literature, documents produced by the parties and third parties to this litigation, and my research and experience in the field of telecommunications propagation.

8. In summary, my conclusions are as follows: (A) Due to terrain features and man-made structures, broadcast signal reception often does not meet the FCC nominal service area standards for acceptable over-the-air reception; (B) Consumer television receiving antenna installations are often inadejuate, resulting in unacceptable reception of over-the-air signals; (C) Operational impediments exist which limit the efficacy of cable/antenna switching as a substitute for cable carriage. The basis and reasons for the foregoing opinions are set forth below.

A. Due to Terrain Features and Man-Made Structures Reception of Broadcast Signals Often Does Not Meet FCC Assumed Quality Standards Within the FCC Nominal Service Area

9. The FCC developed the concept of service areas for broadcast television in the early 1950s as a means of allocating frequencies in the electromagnetic spectrum to maximize geographic coverage of broadcast signals. Service areas were defined [1] by establishing minimum field strengths which result in signals sufficient to overcome the television receiver's noise level or the interference level resulting from distant television transmitters. To establish the minimum field strengths required, the FCC made certain assumptions about the characteristics of the home receiving system, such as the type and quality of antenna and transmission line, about the receiving antenna height, and further assumptions about the percentages of time and location that the signal should be available to the viewer. The FCC authorized the Television Allocations Study Organization ("TASO") to conduct subjective tests to determine the perceived quality of the received signal and from those tests learned that a received signal-to-noise ratio of 30 dB gave what a majority of volunter viewers considered to be a "passable picture". Throughout this declaration, when I refer to an "adequate" or "sufficient" signal, I mean a signal sufficient

[1] O'Connor, 1968.

to achieve a passable picture or better, as defined by the tests described above.

10. The FCC next defined two distinct regions: the Grade A service area, within which the signal would be subjected to urban man-made noise levels and viewers would have simpler receiving installations for reception of nearby signals; and the Grade B service area, which would be free of man-made noise and, because of the distance from the transmitter, viewers would need more complex receiving installations to operate in the fringe reception areas near the perimeter of the service area. In each service area, the FCC assumed the consumer would have an outside antenna located at 30 ft above ground level.

11. There are three television bands in the electromagnetic spectrum: the low UHF band at television channels 2-6, the high UHF band at channels 7-13, and the UHF band at channels 14-83 The FCC next calculated the *minimum* field strength necessary for each of the three bands to obtain a passable or better isgnal within each of the Grade A and Grabe B service areas Thus there are six sets of field strength values for the combinations of three bands and two service areas. (Field strength refers to the magnitude of the electric field vector; it is the electric field that is intercepted by the antenna, transmitted to the television receiver through the transmission line, and converted into a signal detectable by the television receiver.)

12. The FCC then derived empirical propagation curves ("the FCC Broadcast Curves")[2] which can be used to indicate the geographic area within which the minimum field strength of a broadcast signal could be expected to be sufficient to provide a passable signal 50% of the time at 50% of the locations. The propagation curves were developed assuming average terrain for the United States, meaning gently rolling hills. The FCC Broadcast

[2] FCC Report No. 6602, and CFR, § 73.699 Figs. 9 and 10.

Curves procedure predicts field strength at any receiver location based only on the transmitting antenna height above average terrain (towards the receiver) and the distance between the transmitter and receiver. The same family of curves are used for every transmitter site in the U.S.

13. A television broadcaster can use terrain maps to determine the transmitter antenna height above average terrain along each of eight specific radials from the transmitting site. By overlaying the FCC Broadcast Curves on a political boundaries map, the broadcaster can draw two sets of contours surrounding the transmitting location representing the broadcaster's Grade A and Grade B service coverage areas In other words, the contours would show the geographic area within which the broadcaster is predicted to provide a passable or better signal.

Insufficient Quality of Signal

14. Two propagation issues are not addressed in the above procedure. First, because terrain varies from site to site, a broadly-defined set of propagation curves does not accurately reflect differing terrain effects. Second, multiple signals coming from the same transmitting source reflecting off terrain features and man-made structures often create secondary signals that arrive at the TV viewer's antenna at *almost* the same time as the primary, desired signal, causing multiple images, or "ghosts", in the viewer's picture. As a result of these factors, described more fully below, television viewers often do not obtain over-the-air reception of a picture of the same quality as the FCC Broadcast Curves predict for their service area.

Terrain Factor

15. To evaluate the specific terrain features at a given broadcasting site, terrain-dependent propagation models have been developed by NTIA/ITS[3] and others. The

[3] NTIA Report 82-100, 1982.

ITS terrain-dependent model is sometimes used by broadcasters and consultants to determine coverage for broadcast TV stations. With a description of the terrain profile between the transmitting site and receiving site extracted from digital terrain data bases, these models predict the signal based upon the terrain characteristics of the specific path. After analyzing terrain profiles from closely-spaced radials that completely surround the transmitting site, contours of coverage based upon the FCC's field strengths for Grade A and B service can be plotted. The contours using terrain-dependent models more accurately predict the geographic coverage of a broadcaster's signal than contours predicted using the FCC Broadcast Curves. When the resulting plots are overlayed on topographic maps, the contours of service follow along the predominate terrain features that surround the transmitting site. Within the plotted contours of service, there can be "service holes", cause by terrain features between the transmitter and the receiving site that block the desired signal, where the signal drops below the service threshold. Likewise, in regions where the terrain rises along ridges at long distances from the transmitting site and outside the general Grade A or B contour areas, there may appear "service islands" where the signal suddenly exceeds the service threshold.

16. I have compared the service coverage based upon the FCC Broadcast Curves and that based upon a terrain-dependent propagation model for three U.S. cities. I chose the locations and commercial TV stations to represent various conditions: Chicago with station WGN, Denver with station KMGH, and San Francisco with station KGO. Figures 1 through 6 show the results. Figure 1 gives the coverage plot with Grade A and Grade B service for the Chicago station using the FCC curves method to predict service. Figure 2 shows the coverage results using the ITS Irregular Terrain Model for the same station. The Chicago area has rather uniform terrain and as a result there is not much difference between

coverage areas on the plots. Figure 3 shows the FCC curves method results for Grade A and Grade B coverage in San Francisco. Figure 4 shows the results when the ITS terrain-dependent model is used to compute

* * * *

coverage. Note the Grade B coverage "islands" appearing in the upper right hand corner of the plot in Figure 4 that are far from the predicted Grade B contour of the FCC curves method in Figure 3. Figure 5 shows the FCC curves method coverage for the Denver station; note that even the FCC curves method is sensitive to height above average terrain (haat) along each radial for this site. Towards the mountains to the west, the broadcasting antenna has a small haat value and towards the east over the plains, the antenna has a relatively large haat value with a resultant larger coverage distance. Figure 6 shows the corresponding Grade A and B coverage using the ITS terrain-dependent model. In each of the figures, the area, the total population, and total households within the Grade A and Grade B contours are given. The population and household numbers are based upon 1990 census data.

17. The number of households that are predicted to receive a desired grade of service differs between the two prediction methods. The FCC curves method often overestimates the predicted coverage as compared with the terrain-dependent models. In other words, within a Grade A or B area generated using the FCC method, there are television viewers who will not receive the predicted grade of over-the-air television service. The percentage of households not covered or lost from the comparison depends upon the local terrain, but the problem is present in television markets where terrain features are prominent, including larger markets such as the Los Angeles, San Francisco-Oakland-San Jose, Pittsburgh, and Seattle-Tacoma markets.

Multipath and Shadowing

18. Most people have observed ghosts on over-the-air television, even the fluttering variety of ghost caused by a plane flying overhead. The FCC Broadcast Curves and the terrain-dependent models predict signal levels based upon distance and terrain factors; neither model accounts for signal loss due to "shadowing" by man-made objects or for the loss of signal quality due to "multipath" effects. In dense urban areas such as Chicago or New York, tall buildings are typically the tallest structures available for mounting the broadcast transmitting antennas. The problem for many urban and suburban TV viewers is an outside antenna often has its line-of-sight path toward the transmitter blocked by one or more other buildings. Although the received signal is predicted to be strong, in fact the signal is blocked by the buildings or other obstacles ("shadowing") or corrupted by other reflected signals ("multipath") and it does not provide a picture of acceptable quality.

19. Within the Grade A coverage contours shown in Figures 1 through 6 are areas of unacceptable signal quality due to multipath. In the Chicago area, the tall buildings create the multipath; in Denver, the nearby foothills and mountains create the multipath; and in San Francisco, both man-made and terrain features cause multipath. The area affected by lost due to multipath is not easily quantified but the resultant annoyance is well documented. Studies have been performed on viewers' perception of picture quality due to multipath impairments on TV broadcast signals. One study[4] indicated in general that signals with multipath components that were about 30 dB (decibels) below the primary signal were considered "just perceptible" and those about 20 dB below were considered "not yet objectionable". These studies indicate that even these rather weak multipath levels affect picture quality as perceived by TV viewers.

[4] Lessman, 1972.

20. From measurements[5] made by ITS in Denver and San Francisco in the TV bands, multipath signals could be found at nearly every measurement site. The sites had been selected to represent the following urban, suburban, and rural archetypes:

- open residential
- wooded residential
- urban with low buildings
- to the side of downtown
- behind downtown

To quote from ITS' Denver report, "the sites where we found strong multipath seemed always associated with buildings or other manmade structures. In general, there was more mutlipath at UHF than at VHF, more with omnidirectional antennas than otherwise, and more with low antennas than with high. But these rules describe only trends; at individual sites they were often violated."

21. ITS' findings are corroborated by other studies. Jules Cohen, a well-known and widely respected engineer, submitted the following findings to the FCC on behalf of the Television Operators' Caucus in MM Docket No. 85-349:

> "Man-made obstructions prevalent in towns and cities result in both substantial shadowing of many receiving locationsp roducing signal strength well below calculated values and those same structures are sources of signal reflections causing multiple images. In many insatnces, signal strength is sufficient that, if otherwise unimpaired, an excellent picture could result, but multiple images impair or sometimes even completely destroy reception. In many cities, natural obstructions combine with those of the man-made variety to futrher exacerbate reception problems.
>
> "A prime example of a city where man-made structures prevent good reception at most locations even with outdoor antennas is New York. In New York,

[5] NTIA Report 90-271, 1990, and NTIA Report 91-278, 1991.

> at receiving locations having a direct line of sight to the World Trade Center from which most New York area stations operate, picture quality can be impossibly poor because of multiple images. . . .
>
> "Examples of cities with combined man-made and natural obstructions interfering with good reception, even from local stations, are San Francisco, Pittsburgh, and Seattle. . . . .
>
> "Even in Washington, D.C., where commercial buildings over twelve stories are not permitted and natural terrain obstructions are relatively few, substantial areas of very poor reception exist. . . . Some of these residences may be less than five miles from the Washington area television transmitting antennas and have extremely high predicted signal strength; nevertheless, shadowing is so severe that reception is very poor."[6]

Field Measurements of Received Signal Quality

22. Field measurements demonstrate that terrain and multipath effects cause significant problems for over-the-air television viewers and cause degradation of picture quality. In his statement to the FCC, Cohen reported the results of a field survey[7] he conducted of television reception along two radial paths at locations from one to 35 miles from the U.S. Capitol in Washington, D.C. with a total of 392 separate picture observations:

> "The purpose of the field survey was to evaluate the likely quality of television reception in this area when indoor antennas are required to be used. . . . When, in each instance, the antenna was adjusted for the best picture using the test setup providing better signal strength than would be observed within the walls of a house, only 23.7 percent of the total num-

[6] Jules Cohen & Associates, pp. 6-9, 1986.

[7] Jules Cohen & Associates, pp. 10-13, 1986.

ber of observations achieved picture quality comparable to that expected on cable. More than three-quarters of the observations exhibited poor quality. The UHF stations particularly suffered. Only 18.1 percent of the UHF observations were comparable to picture quality expected from cable. More than 80 percent suffered significant degradation."

23. Similarly, a recent report [8] prepared by members of the commercial and public broadcasters and cable television industry described measurements made in Charlotte NC on reception of signals from broadcast transmitters operating on Channels 6 (VHF) and 53 (UHF). The purpose of the measurements was to determine the performance of the proposed high definition television ("HDTV") design as compared with the present National Television System Committee ("NTSC") standard for television within the U.S. The report notes:

> "A variety of terrain conditions in the area permits consideration of terrestrial broadcasting performance over paths ranging from relatively smooth to sufficiently irregular to produce many obstructed receiving points. The Charlotte community is of such size that urban reception conditions can be explored, and smaller communities in the vicinity permit the exploration of what may be termed a suburban environment."

The performance of the reception of television signals was rated by two expert observers using the International Radio Consultative Committee ("CCIR") five level rating system [9], that is much like the TASO rating system used by the FCC to establish signal quality standards

[8] Assoc. For Maximum Service Television, Inc., Cable Television Laboratories, Inc., and Public Broadcasting, and Public Broadcasting Service, pp. 6-18, 1994.

[9] International Telecommunications Union, "Method for the Subjective Assessment of the Quality of Television Pictures", Recommendation ITU-RBS.500, 1992.

(see ¶ 9 above). In the CCIR system, a rating of 5 indicates imperceptible impairments, with 4 being perceptible, but not annoying impairments, 3 being slightly annoying, 2 being annoying, and 1 indicating very annoyig impairments. In Table 1, the results of the report's Tables 6 and 7 are combined. Table 1 reports the percentage of locations at regular distance intervals at which reception was level 3 or better. If the percentages in Table 1 are subtracted from 100, the table reveals that the expect observers considered reception at sites between 30 and 39.9 miles from the transmitter, for example, to be annoying or very annoying on channel 6 for 86% of the sites and on channel 53 for 41% of the sites.

Table 1. Charlotte NC Service Performance for NTSC versus Distance

	Channel 6		Channel 53	
Distance (miles)	No. of sites measured	% of NTSC sites CCIR 3, 4, or 5	No. of sites measured	% of NTSC sites CCIR 3, 4, or 5
0.0- 9.9	27	67	32	88
10.0-19.9	38	68	38	97
20.0-29.9	33	42	51	88
30.0-39.9	28	14	34	59
40.0-49.9	28	18	28	64
50.0-56.0	15	0	16	25
Total	169	40	199	76

The report states that the television signals were transmitted at 10 dB below maximum allowable power; however the reduced power was not given as a reason for the poor reception performance. Instead, the report cites other causes:

> "The statistics [shown in Table 1] reveal that picture impairments were far more prevalent in VHF than UHF. This unanticipated result is believed to be attributable to the prevalence of high impulse noise within the service area, the presence of co-channel

interference from distant stations, low level interference from cable installations on channel 6, and/or the interference to channel 6 reception from close-by noncommercial education FM stations."

The A/B Switch Does Not Improve Broadcast Reception

24. The ITS multipath study, the Cohen field survey, and the HDTV measurement project demonstrate the significance and extent of the terrain and multipath effects discussed above. Television viewers are often unable to obtain the quality of television reception predicted for their nominal FCC service area. In other words, these effects limit the extent to which viewers can obtain over-the-air television.

25. The Cable TV industry had its start as CATV—Community Antenna TV—because good TV reception was not available in many locations. Antennas could be placed at a few advantageous locations, and the signals from those locations could be supplied via coaxial cable to locations which had poor reception. Furthermore, it was recognized that this should often be a "community" enterprise, not only because there was a widespread general need for better reception, but because the cost of erecting and maintaining effective antenna systems was often in excess of what the individual homeowner could afford.

26. Since those early days of TV broadcasting, some things have changed and some have not. There has been a large growth in the number of TV transmitters and translators, which means that received signals are often more numerous and much stronger. However, the basic physics of radio wave propagation has not changed. Terrain effects limit the coverage of a broadcast station. A radio signal that may, on average, be strong enough to provide good reception will experience many locations where the ardio wave has been blocked by terrain or buildings (shadowing) or distorted by reflections (multipath).

27. A/B switches are neither intended nor designed to television reception. They are merely designed to permit cable subscribers to switch between reception of cable television signals and reception of the same quality of over-the-air television signals available to non-cable subscribers. TV reception is still highly variable with location and obtaining a high-quality TV signal from over-the-air television broadcast transmitters can be a challenging and troublesome endeavor. Therefore, for the reasons stated above, cable subscribers in areas underserved due to terrain and multipath effects would not obtain an acceptable signal strength even if an A/B switch were used to obtain over-the-air signals of the local broadcasters.

B. Inadequate Television Receiving Antenna Installations Result in Unacceptable Reception of Off-the-Air Signals

Components for Reception of Broadcast Television

The components for reception of broadcast television are:

- the transmitting installation
- the propagation medium
- the receiving installation

28. For broadcast television, the transmitting installation includes the station's transmitter, the transmitting antenna, and the transmission line from transmitter to antenna. The propagation medium is the over-the-air channel for broadcast television. The receiving installation is the home viewer's antenna, the transmission line, and the television receiver (i.e. the television set).

29. The quality of the signal delivered from the broadcast transmitter to the television receiver depends upon:

- the transmitter effective radiated power
- the signal propagation loss
- the reeciving system signal gain

The transmitter effective radiated power is limited in value to maximum levels set by the FCC.

30. Signal propagation olss is the degradation in the strength of the broadcast signal due to natural factors. In general, the signal propagation loss from a transmitter to a receiver depends upon three parameters:

- the height of the transmitting antenna above the surrounding terarin
- the distance from the transmitter to the receiver
- the height of the receiving antenna above the ground and surrounding environment (such as buildings)

If the first two parameters are held constant, raising the receiving antenna in height generally will improve the signal quality.

31. Gain refers to the increase in signal strength that can be achieved by the components of the television viewer's receiving system. The receiving system is the only portion of the link over which the home viewer has some control and consists of:

- the receiving antenna
- the transmission line including couplers, baluns, and signal splitters
- the television receiver

The home viewer can select among indoor and outdoor antennas that provide various levels of power gain and directivity. These are usually marketed as good, better, and best antennas or "city quality" and "fringe-area quality" antennas. As an example of the selection available to consumers, I found 13 outdoor antennas and 14 indoor antennas in a recent Radio Shack catalog, with a rating of quality for each antenna. Television viewers are given someg uidance by most receiver manufacturers in the TV receiver user's manuals on the connection of outdoor and indoor antennas, types of transmission lines, and the need for signal splitters, etc.

The Broadcast Television Grades of Service Assumptions

32. In developing the television Grade A and Grade B service areas, the FCC made assumptions about perceived video signal quality, ambient system noise and interference levels, terrain features and associated propagation losses, and the home viewer's receiving installation [10]. Research has demonstrated, however, that viewers may not achieve the performance from their receiving ssytem that the FCC assumed.

33. The FCC assumed the consumer's receiving antenna was positioned at 30 fet above ground. It was also assumed that the receiving antenna was located outside, on top of a two-story home surrounded by other two-story homes. Finally, the FCC assumed that the home receiving system would provide certain gain characteristics, as given in Table 2 below. (The receiving system gain is the sum of the antenna gain, given in decibels relative to a dipole antenna (dBd), minus the transmission line loss, including transformer, combiner, and splitter losses, given in decibels (dB). In fact, however, these receiving system gain assumptions are not achieved in many households and this leads to unacceptable reception.

Table 2. FCC Assumed Receiving System Gain Characteristics

Grade of Service	Parameter	Channels 2 to 6	Channels 7 to 13	Channels 14 to 83
Grade A	Antenna gain	0 ddB	0 dBd	8 dBd
	Transmission line loss	1 dB	2 dB	5 dB
	Receiving system gain	—1 dB	—2 dB	3 dB
Grade B	Antenna gain	6 dBd	6 dBd	13 dBd
	Transmission line loss	1 dB	2 dB	5 dB
	Receiving system gain	5 dB	4 dB	8 dB

[10] O'Connor, 1968.

The Receiving System Installation Realities

Receiving System Gain May Not Be Adequate

34. In the late 70s and early 80s, ITS made measurements of antenna gain for commercially available television receiving antennas[11] and of receiving system gain in typical homes.[12] The results of those measurements indicate home viewers commonly have gain values below those assumed by the FCC. As a result, those viewers may not achieve sufficient receiving system gain to obtain a signal of the quality predicted by the FCC.

35. Antenna gain measurements were made by ITS for about 12 new antennas; in addition, insertion losses were measured for typical couplers, transmission lines, and signal splitters. Combining the best components together and then the worst together gives the range of possible receiving system gains, as shown in Table 3. The table represents the best and worst configured receiving system gain that a home viewer might construct for the home installation. No home viewer would knowingly select the components that gave the worst gain; however, without consumer product information, the home viewer may select poor components. Typical gains would fall between the best and worst values. It should be noted that antenna technology for home TV reception has not changed over the years so that these measured values are probably representative today as they were 10-15 years ago.

Table 3. Measured System Gain Using New Components Available to Consumers

Receiving System Gain	Channels 2 to 6	Channels 7 to 13	Channels 14 to 83
Best configured	6.3 dB	10.0 dB	9.4 dB
Worst configured	—10.3 dB	—9.0 dB	—10.1 dB

[11] NTIA Report 79-22, 1979

[12] NTIA Report 81-68, 1981

36. Receiving system gains deviated even further from the FCC's assumptions when ITS evaluated actual home receiving systems. Measurements were made of receiving systems in use at about 50 homes in the Chicago-Peoria IL area. ITS measured gain by comparing the home owner's received over-the-air signal with that received by a reference antenna located near the home owner's antenna. Table 4 gives the home instalaltion measurement results and illustrates that, because of component aging, corrosion, lightning damage, or poor installation, the home viewer's sytem gains are generally less than those given by new antennas. Indeed, a study sponsored by the National Association of Broadcasters ("NAB")[13] found that the median age of a subscriber's TV antenna was 12 years, for those subscribers who still had outside antennas. Such antennas are likely to achieve poor gain.

Table 4. Measured System Gain of Home Installations

Receiving System Gain	Channels 2 to 13	Channels 14 to 83
Upper decile of all measurements	5.9 dB	7.7 dB
Meadian of all measurements	0.5 dB	—3.6 dB
Lower decile of all measurements	—19.9 dB	—24.2 dB

37. ITS sorted the results of the home receiving system gain measurements in the Chicago-Peoria IL area according to those homes that were located within the Grade A region and those that were outside the Grade A region. The measured system gains were then compared to the gains assumed by the FCC to give adequate video signals in the service areas (reported in Table 2). Table 5 shows the results of the sorted measurements. Table 5 demonstrates that within the Grade A service area, 51% of the installations measured did not provide receiving system

[13] ELRA Group, Inc., 1986, p. 16

gain meeting the FCC assumptions for the VHF band and 95% did not meet the FCC assumptions for the UHF band. Outside the Grade A area (that is, Grade B and beyond), sufficient gain to meet the FCC assumptions was not achieved at 77% of the installations for the VHF band and 78% for the UHF band.

Table 5. Measurement Population Not Having Sufficient Receiving System Gain for Adequate Video Signals in the Two Service Areas

Channels	Service Area	Percentage of Measured Homes with Insufficient Receiving System Gain
2-13	Within Grade A	51%
	Outside Grade A (Grade B and beyond)	77%
14-83	Within Grade A	95%
	Outside Grade A (Grade B and beyond)	78%

38. The FCC assumed that viewers who are further from the transmitting site will typically install better receiving systems than viewers closer to the transmitting site. Indeed, Figures 7 and 8 show that better receiving system gain is generally achieved by viewers further out. It remains clear, however, that consumers frequently do not maintain the quality of installations

* * * *

assumed by the FCC and thus the gain obtained from antennas at almost any selected distance is often less than the gain assumed by the FCC.

Outside Antenna Location May Not Be Available

39. Although the FCC assumed home viewers would have an outside television antenna, for various reasons many home viewers do not have outside antennas. The NAB sponsored survey [14] discussed above found:

- "Only about one percent of cable subscribers currently have an outdoor antenna and an A-B switch.
- "98% of cable homes do not have roof top antennas connected to their cable sets. Give percent have outside antennas in use with non-cable sets.
- "Well over half of all cable subscribers (57%) have never had an outdoor antenna.
- "About half of the 43% of cable subscribers who have ever used an outdoor antenna have taken it down. Half of those removals at the time cable was initiated. . . . ."

40. There are many reasons why viewers do not have outside antennas, including:

- installation not allowed in apartment buildings [15]
- installation not allowed by city ordinance [16]
- installation not allowed by neighborhood or development covenants [17]
- available antenna location blocked by nearby man-made structures or terrain features
- implementation prevented by inadequate mounting methods, difficult transmission line runs, hazardous installation procedures, etc.

[15] Although apartment dwellers will not need their own antennas if a master antenna is available, there is no indication whether apartment buildings typically have master antennas available.

[16] NCTA Engineering Committee, 1986, p. 22

[17] The Community Association Institute, headquartered in Alexandria VA, states there are 150,000 condominium associations, home owner associations, and cooperative associations within the U.S. The 11.6 million households, belonging to these associations, are cvered by covenants. About 80.90% of these associations have restrictive covenants that limit the use of outdoor broadcast TV or radio antennas. Ref: Ms. Debra Bass, Communications Director for CAI and Mr. Tom Hindman of Orten & Hindman, PC, of Denver CO

Viewers who are unable or unwilling to have outdoor antennas must have indoor antennas to receive over-the-air broadcast TV signals. Indoor antenna reception will only be adequate when the viewer is close to the transmitter. The ITS report on receiving system gain made a limited number of measurements on indoor antennas and their performance versus an equivalent antenna mounted outside at 30 ft above ground. The ITS report found that the home viewers using indoor antennas had system gains that were about 25 dB lower than those measured with outside antennas. To illustrate the difference in reception between indoor and outdoor antennas, I created Figure 9 by changing the contour levels for the Chicago area. I reduced the assumed signal strength by 25 dB to simulate the condition of having 25 dB poorer performance in the receiving system antenna. The result, as shown in Figure 9, is that, in the Chicago area, 37% fewer households would receive Grade A service and 17% fewer households would receive Grade B service than with outdoor antennas. Field measurements made by Jules Cohen, discussed in ¶ 22 above, support these findings regarding the inadequacy of indoor antennas.

CATV Can Compensate for Home Viewer's Inadequate Receiving System Installation for Broadcast Reception

41. In conclusion, the ITS antenna installation study indicated home viewers' antenna system gains were lower than had been assumed by the FCC in defining required field strengths. The ITS study noted, "Such performance is attributed to a combination of inadequate system design, installation, and maintenance. To some degree, we attribute this condition to a lack of design, installation, and service information to the consumer". Thus the average TV home viewer is at a disadvantage to provide and maintain an adequate receiving system.

42. Because of the inadequacies of receiving antenna installations, use of an A/B switch to select between cable and TV antenna will not be sufficient to provide an

adequate over-the-air signal for many cable subscribers. Many home viewers fail to properly install and maintain an outside antenna installation, and others are unable even to provide an outside antenna.

* * * *

C. Operational Impediments Exist which Limit the Efficacy to Cable/Antenna Switching as Substitute for Cable Carriage

43. Even when a viewer can obtain an adequate broadcast signal and has an adequate antenna system, fully utilizing the cable and antenna signals by using an A/B switch may involve substantial equipment complexity, viewer inconvenience, and a compromised ability to use many features of the home entertainment system. An adequate antenna system can be as simple as a set of rabbit ears or as complex as a high-gain outside antenna with rotor, which itself imposes additional difficulties and costs upon consumers. When other components of the home entertainment system are integrated, the resulting web of wires and equipment can be complex and may cause serious impediments to the combined use of cable and broadcast systems, even though combined use is theoretically possible.

44. FCC Chairman Reed Hundt recently expressed concern about consumers' ability to cope with home entertainment and television operation:

> "DALLAS—The digital revolution promises to send an avalanche of channels and services into your home, but it also could turn the top of your TV set into a mountain of electronic gizmos.
>
> "That's what Federal Communications Commission Chairman Reed Hundt is worried about.
>
> "So in a speech Tuesday at the National Cable Television Association's convention, Hundt urged cable, broadcasting, telephone and other companies to work together to ensure that devices needed to re-

ceive the next generation of television are compatible with each other.

" 'Consumers want choice, simplicity and cheapness,' Hundt said after his speech.

". . . .

"Incompatibility of TV equipment irks consumers and sends them running to Congress or Federal regulators for help, Hundt said. When some cable customers—including members of Congress—found they couldn't use the 'picture-in-picture and other options on their TV sets and had problems running their VCRs, Congress stepped in and told the FCC to come up with rules solving the problem." [18]

System Complexity

45. Home electronics configurations vary greatly. For purposes of illustration, consider the home TV system shown in Figure 10. A set top cable converter box is controlled by Remote Control #1. The cable converter box converts the selected cable channel to channel 3 or channel 4 (for example, assume channel 3) and feeds the cable signal to the television receiver. In addition, the converter provides access to pay-per-view and scrambled programming. The system also has a VCR which is controlled by Remote #2. It is located in the radio frequency ("RF") signal path following the A/B switch. This placement enables the VCR to record either cable or broadcast channels.

[18] Associated Press, May 10, 1995

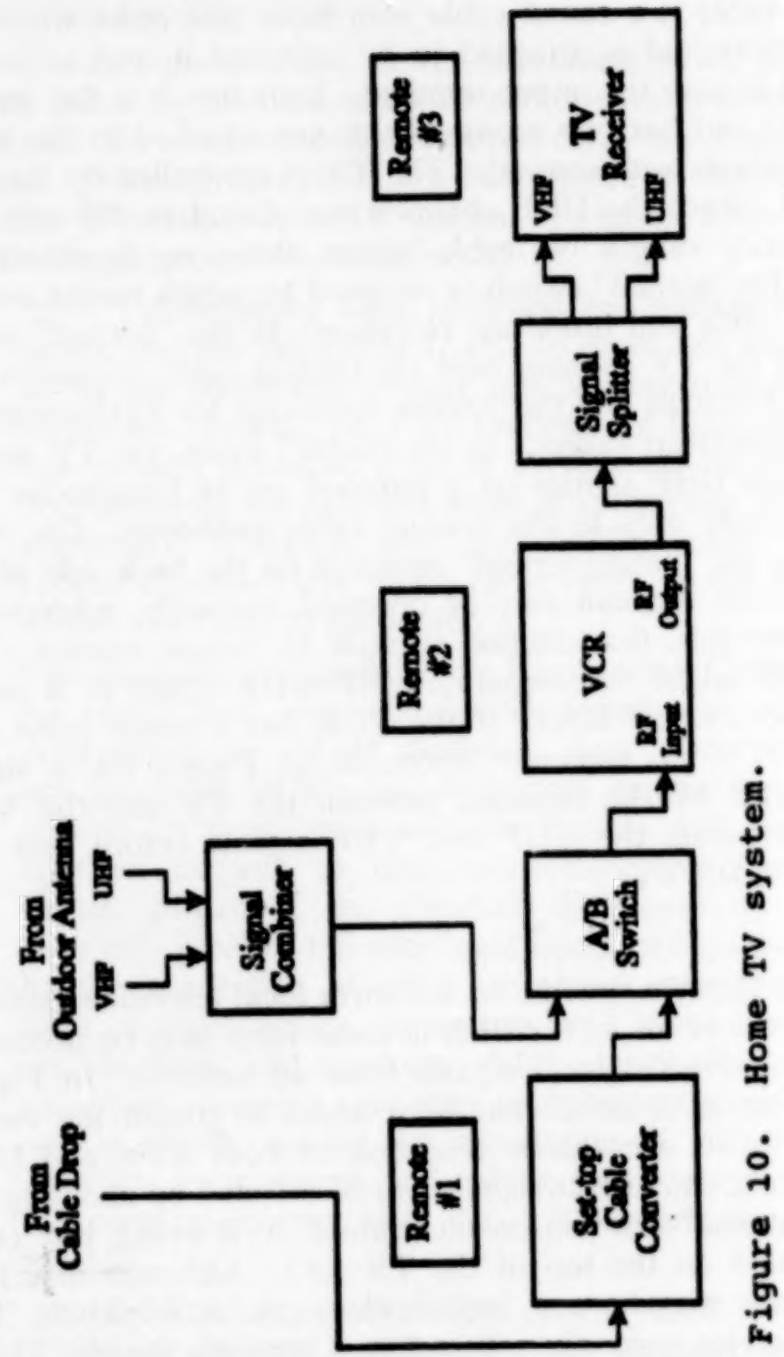


Figure 10. Home TV system.

46. Assume that the TV receiver is a "cable ready" receiver and is several years old. It has a 75-ohm coaxial cable connection input for VHF channels and a 300-ohm twin-line connection for UHF-TV channels. (Coax-

ial cable is a round cable with inner and outer wire conductors and is attached to by inserting it into or screwing it onto the imput terminal. Twin-line is a flat double wire and has two prongs which are attached to the input terminals with screws). The TV is controlled by Remote #3. Since the UHF channels are placed in different frequency ranges on cable versus those on broadcast, a "cable/normal" switch is required to switch tuning modes for cable and broadcast reception. In the "normal" mode and the TV receiver uses the coaxial cable connector for VHF signals and the 30-ohm connector for UHF-channels, as described earlier. In the "cable" mode, the TV set receives UHF signals on a different set of frequencies and connects only to the coaxial cable connector. On older sets, the "cable/normal" switch is on the back side of the receiver and can only be operated manually, whereas on newer sets, the selection is made by remote control. The VCR might have separate VHF/UHF inputs or it might have a single input. If the VCR has a single input and the TV has separate inputs, as in Figure 10, a signal splitter will be required between the TV and the VCR to separate the UHF and VHF signals before they are fed to the TV.

* * * *

47. If cable systems do not carry local television stations, the use of an A/B switch in some form may be necessary to receive the local signals from an antenna. In Figure 10, an A/B switch has been added to permit the viewer to obtain over-the-air reception of both VHF and UHF signals. Broadcast signals can be selected by choosing the "Antenna" position on the manual A/B switch box (also located on the top of the TV set). Although new televisions may have a built-in electronic A/B switch, TVs in service generally will require a separate switch. Figure 10 assumes an external antenna is available for reception of signals over-the-air. If no antenna is in service, one must be installed in order for the viewer to obtain over-the-air reception.

Installation Considerations

48. The first problem the viewer encounters is the complexity added by the need to install additional components to enable the viewer to switch between cable and antenna signals. The cable providers are fully aware of the complexities of hooking up a TV system. To quote from the NCTA Engineering Committee report: [19]

> ". . . , determining what hook-ups are necessary to ensure that the subscriber is able to make full use of his or her equipment already can be something of a nightmare. Indeed, NCTA's Engineering Committee has recently produced a set of 27 separate diagrams demonstrating the different ways of connecting cable converters, television sets, and VCR's under the various circumstances that a cable operator and subscriber are likely to encounter.
>
> The diagrams prepared by the Engineering Committee reveal that, even without the installation of an A/B switch for off-air reception, most cable hook-ups involving VCR's and converters require the use of one or more input selector devices and signal splitters, as well as extra converters and jumper cables. Moreover, the situations diagramed do not take into account the additional complications posed by the connection of other peripheral components, such as video games, computers, and stereo decoders, receivers, and speakers. Adding an A/B switch for off-air reception capability to these configurations will inevitably require the installation of still more switches, transformers, and cables, further increasing the costs associated with the A/B switch requirement."

49. An additional set of problems occurs when several TV receivers are placed in different rooms throughout the house. If indoor antennas are used throughout the house and if a cable television feed is available for each TV,

[19] NCTA Engineering Committee, 1986, p. 10

the problem is no more complicated than duplicating all of the circuitry in Figure 10 at every TV receiver location within the house. Though this may be burdensome, it is relatively straightforward; the cable signal is carried to every TV receiver in the house on the in-house cable system, while set-top antennas pick up broadcast signals. Indoor antennas are not suitable in many geographical locations, however (see Point B, above). In such a case, a second coaxial cable or transmission line system will be required to connect each TV set to an outdoor antenna. Again, the circuitry in Figure 10 would be duplicated in each room if simliar components were used (or a separate configuration would be required, if not). In many residences, the installation of a second coaxial cable system to carry the over-the-air signal would be required. If the viewer has only one set of internal cabling which is used to feed the cable signal to other rooms the viewer cannot simultaneously use the house cabling to carry both the cable signals and the antenna signals. In such a case he would probably have to limit either broadcast or cable viewing to one room only.

Viewer operational complexity and inconvenience.

50. Even after a complex television installation has been designed and assembled, the problem is not over. An operation as basic as changing channel may become complex and inconvenient. If the viewer has been watching a cable channel, a new cable channel can be selected by pressing the remote control "channel up" or "channel down" buttons, or by directly entering an new channel number. This is the remote mode of operation that most viewers find convenient, which allows the "channel grazing" and "channel surfing" which many viewers use to find more interesting programs, to watch more than one program at a time, or to avoid commercials.[20]

51. Switching to a local broadcast channel received on the antennas is a much more complicated affair. (For

[20] See, for example, Walker and Bellamy, 1998

this exercise we asume that the VCR is turned off and in the direct pass-through mode.) If the viewer in Figure 10 wishes to change from a cable channel to a broadcast channel, he would do the following:

a. Get up from the chair;
b. walk to the TV receiver;
c. change the A/B selector switch from the "cable" to the "antenna" position;
d. walk to the back of the TV receiver;
e. change the TV tuner mode switch from "cable" to "normal" (this step is necessary whenever the desired channel is UHF);
f. walk back to the chair;
g. pick up remote #3;
h. change the TV channel to the desired broadcast channel;
i. see how picture looks;
j. if necessary, walk back to TV receiver, adjust antenna for best picture, (either set top rabbit ears or outdoor rotor, as appropriate);
k. and walk back to chair ot watch program.

52. To switch back to viewing a cable channel would involve a similar set of steps, the exact reverse of the previous set, but omitting the adjustment of the antenna for the best picture, and adding a step to change the receiver back to channel 3. Though the detailed sequence of viewer actions would change for different installations, most installations will involve a similar amount of operational complexity.

Diminished system control.

53. As suggested above in the NCTA Engineering Committee Report, the inclusion of a single A/B switch is often not the only change needed. Switching between cable and antenna reception ripples throughout the view-

er's system, creating extra complexity, cost, confusion, and can reduce the viewer's opportunities to view either the cable channels or the local channels. Even after a viewer invests considerable time and effort to assemble a complex system and performs complex and inconvenient control sequences, the viewer will still find that many operations cannot be performed if part of the TV signals originate on cable and part originate on an antenna. For example, a viewer with the system in Figure 10 could not simultaneously view a cable channel and record an over-the-air station without additional equipment. Examples of lost capabilities may include:

a. Recording a broadcast signal for later viewing, while simultaneously watching a cable program (with the system A/B switch set to the cable position).

b. Recording a cable signal for later viewing, while simultaneously watching an over-the-air program (with the system A/B switch set to the antenna position).

c. Viewing cable and antenna signals simultaneously on TV sets throughout residence not having multiple parallel cable connections to each set (assuming indoor antennas are inadequate).

d. Hopping back and forth between two football games when one is on cable and other is on antenna.

e. Viewing with a picture-in-picture mode, when one signal is on cable and other is on antenna (this might be posible, depending on details of system).

f. Viewing an occasional pay-per-view, when the A/B switch is placed before the cable converter is normally left on antenna (assuming that the pay-per-view authorization/descrambler code is passed over cable).

54. A recent article in *Consumer Reports*[21] addressed the "awkward interface" that the consumer has when attempting to integrate various options. Although the article did not consider the added complication of an A/B switch, its comments on connections with a cable box illustrate the consumer's dilemmas:

> "• If you hook up a VCR to a TV set with a cable box, you may not be able to watch one channel while taping another unless you rent a second cable box for your VCR.
>
> "• The cable box can make it difficult or impossible to use high-end features such as picture-in-picture and channel ID.
>
> "• A cable box often renders a TV set's remote control useless for changing channels. You may need the cable company's remote—at perhaps a dollar or two in monthly charges—to change channels. . . . . "

Problems with A/B switches.

55. There are other problems associated with the A/B switch. First, if the A/B switch is improperly connected, cable television signals can be radiated from the outdoor antenna causing interference instead of good reception. Though this problem would be minimized if A/B switches were built into receivers, converters and VCRs, A/B switches are currently mainly stand-alone, manually operated components. Radiation from improperly installed A/B switches can cause interference to nearby TV sets, especially in the form of severe ghosting to broadcast VHF TV channels.

56. The performance of an A/B switch is critical, especially with respect to switch isolation, which needs to be 80-90 dB. An A/B switch (or associated connecting cables) with inadequate isolation may cause either cable or broadcast VHF channels to be received with severe

---

[21] *Consumer Reports*, Mar. 1995, pp. 164-165

ghosting. An NCTA Engineering Committee report [22] noted

"A. *Signal Degradation*

One significant technical problem associated with the presence of an A/B switch is signal degradation. As described above, inadequate isolation of the over-the-air and cable signals that are delivered into a television set through an A/B switch will cause an unacceptable deterioration in signal quality. However, even where a system installs switches that are designed to provide a sufficient (*i.e.*, 90 dB) level of isolation, there is no guarantee that significant degradation will not occur. Indeed, the results of engineering tests involving A/B switches indicate that in many, if not most, cases the actual isolation level provided by a 90 dB switch falls short of the manufacturer's specifications. (*Footnote omitted*). Moreover, even if a switch initially is capable of providing adequate isolation, several factors are likely to cause its effectiveness to be diminished once it has been installed. For example, some isolation loss is virtually inevitable due to corrosion of the terminating resistors. (*Footnote omitted*). In addition, isolation can be further eroded by poor connections between the A/B switch and the coaxial cable linking the switch to the television set.

"B. *Signal Leakage*

Another technical problem that is inevitable with the installation of A/B switches is increased signal leakage. Part of the problem is the radiation from improperly sealed switch housings and unsheathed connectors is unavoidable. Even if the leakage from any one location is not severe, leakage from many subscriber installation will tend to have a cumulative

[22] NCTA Engineering Committee, 1986, p. 17

impact. The leakage problem is likely to be aggravated by the fact that, under the new rules, cable operators will be required to give their existing customers the option of obtaining free A/B switches by mail together with self-installation instructions. The Engineering Committee estimates that a significant number of the switches mailed to subscribers for self-installation will be installed incorrectly. In some of these cases, either the cable or the off-air antenna will end up connected to the A/B switch output. When this happens, cable signals may be radiated over the air at high gain, violating the Commission's signal leakage rules and, at least potentially, threatening interference with other services. (*Footnote 12 states*, "The fact that the A/B switch has been incorrectly connected may not always be readily apparent to the subscriber, particularly if direct pick-up of strong off-air signals through the subscriber's television input terminals produces a picture even when the external antenna is not properly attached.)"

57. The requirement for high switch performance causes a limited lifetime for A/B switches (an NCTA Engineering Committee report estimated a five-year life, regardless of how much the switch is used [23]).

58. In summary, the use of an A/B switch makes it theoretically possible to watch local broadcast signals from an antenna and other signals from a cable (assuming that the antenna produces a signal of sufficient quality and power). However, such use is inconvenient and complex, requires greater complexity and cost in the hook-up of the home TV system, and much greater ingenuity on the part of the viewer. In spite of these additional efforts, the viewer may find that a number of the more advanced TV system capabilities are no longer available. For all

[23] NCTA Engineering Committee, 1986, p. 3

of these reasons, the use of an A/B switch cannot be considered to be a reasonable substitute for local broadcast stations being carried on cable.

Summary of Analysis of Cable Subscribers to Obtain Off-the-Air Reception of Broadcast Signals

59. The preceding analysis concludes that many cable subscribers can not obtain over-the-air reception of broadcast signals of sufficient quality to produce an adequate picture on their T receivers. The reasons for the conclusions are:

- Due to terrain features and man-made structures, reception of broadcast signals often does not meet FCC assumed quality standards within the FCC nominal service area.
- Inadequate television receiving antenna installations result in unacceptable reception of over-the-air signals
- Operational impediments exist which limit the efficacy of cable/antenna switching as substitute for cable carriage.

60. Some T viewers have inadequate or unacceptable signals within the Grade A and Grade B service regions cast signals by terrain and man-made structures can result in signal levels for some viewers that are below those specified as adequate by the FCC. The same features can cause multipath that result in ghosts for still other viewers. The terrain and man-made structures are features that the broadcaster has no control over. Broadcasters often cannot provide translators to overcome some of these problems faced by the viewers. In fact, these are prblems that gave rise to Community Antenna Television (CAT) systems deployed by communities anxious to have good television service.

61. Measurement studies indicate many home viewers have inadequate receiving system installations. In fact,

the home viewers' receiving system gain is often below the value assumed by the FCC to provide adequate signal levels for their TV receivers The design, installation, and maintenance of the home receiving system is apparently beyond the technical skills or interest of many home viewers. Also, even if they had the skills and interest, other viewers are not allowed to have outside antennas These viewers must rely on indoor antennas to provide their over-the-air reception of broadcast TV signals, and often an indoor antenna does not provide adequate system gain to receive an acceptable signal.

62. Finally, home viewers face additional problems with the A/B swich. Viewers may need to maintain many confgurations in order to receive both over-the-air and cable signals to all Ts in the household, or to view cable while recording over-the-air TV on a VCR, or to view picture-in-picture from both over-the-air and cable sources.

63. A/B switches are an inadequate alternative to cable carriage for cable subscribers who wish to view broadcast cable signals not carried by the cable system. Any of the items listed can prevent, or cause cable subscribers to forego, use of an A/B switch to view such stations. In addition, while some individual home cable TV viewers may be willing to attempt to overcome some of the constraints on their ability to view broadcast TV, the cumulative effect of these constraints may discourage many, if not most, from even trying.

Citations:

Television Allocations Study Organization, "Engineering aspects of television allocations," report to the Federal Communications Commission, 1959.

J. Damelin, W. A. Daniel, H. Fine, and G.V. Waldo, "Development of VHF and UHF propagation curves for TV and FM broadcasting," FCC Report No. 6602, 1966.

A. G. Longley and P. L. Rice, "Prediction of tropospheric radio transmission loss over irregular terrain, a computer method—1968," ESSA Tech. Report ERL 79-ITS 67, 1968.

R. A. O'Connor, "Understanding television's Grade A and Grade B service contours," IEEE Trans Broadcasting, vol. 14, pp. 137-143, 1968.

R.G. FitzGerrel, R.D. Jennings, and J.R. Juroshek, "Television receiving antenna system component measurements", NTIA Report 79-22, 1979 (DAE VOL. VII.P, EXH.

R.D. Jennings, "Television field strength and home receiving system gain measurements in Northern Illinois, NTIA Report 81-68, 1981 (DAE VOL. VII.P, EXH. 391).

G. Hufford, A. G. Longley, and W.A. Kissick, "A guide to the use of the ITS irregular terrain model in the area prediction mode," NTIA Report 82-100, 1982 (DAE VOL VII.P, EXH. 390).

J. Allnat, "Transmitted-picture assessment," John Wiley & Sons, New York, 1983.

ELRA Group, Inc., "Outdoor antennas, reception of local television signals and cable television", prepared for the National Association of Broadcasters, Jan., 1986 (CR VOL. I.W, EXH. 118, Appendix H-1).

National Cable Television Association, "The A/B switch requirement: A report by the NCTA Engineering Committee', Nov. 1986 (CR VOL. I.DD, EXH. 183).

Jules Cohen & Associates, P.C., "Engineering statement on behalf of Television Operators' Caucus relative to carriage of television broadcast signals by cable television systems, MM Docket Number 85-349", Washington DC, Oct. 1986 (CR VOL. I.AA, EXH. 158).

Office of the Federal Register, *Code of Federal Regulations,* Title 47, Telecommunications, Part 73, Radio Broadcast Stations, Oct. 1990.

G. Hufford, J. R. Godwin, R. J. Matheson, V. S. Lawrence, and L. E. Pratt, "Characterization of the HDTV channel in the Denver area," NTIA Report 90-271, 1900 (DAE VOL. VII.P, EXH. 389).

Lessman, Journal of Motion Picture and Television Engineers, 1972.

Walker James R. and Robert Bellamy, Jr., Editors, *The remote control in the new age of television,* Praeger Publishers, 1993

Assoc. For Maximum Service Television, Inc., Cable Television Laboratories, Inc., and Public Broadcasting Service, "Field test results for the Grand Alliance HDTV transmission subsystem", submitted to SS/WP2 Field Testing Task Force of the Advisory Committe eon Advanced Television Service of the Federal Communications Commission, Sept. 16, 1994 (DAE VOL. VII.R, EXH. 449).

Consumer Union, "The home entertainment guide", *Consumer Reports,* pp. 156-207, Mar. 1995.

"Friendly Technology Concerns FCC," Associated Press, May 10, 1995 (DAE VOL. VII.R, EXH. 450).

May 23, 1995

/s/ Eldon J. Haakinson
ELDON J. HAAKINSON

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.A

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF TOM MEEK

Pursuant to 28 U.S.C. § 1746, I, Tom Meek, declare as follows:

1. I am submitting this affidavit in support of the motion for summary judgment made by defendants in the above captioned proceeding. My qualifications are described in Attachment A, hereto.

2. In the course of my work in this proceeding I have compiled or generated literally thousands of pages of empirical data, all of which was provided to plaintiffs as attachments (A through P) or exhibits (A through CC) to my April 21, 1995 Expert Report. I have attached to this Declaration the same attachments I had attached to my Expert Report, plus one additional attachment drawn from the exhibits to that Report. However, because the exhibits are so voluminous I have simply filed one copy with the Clerk of the Court. The methodology I used, and the results of that work, will be described in more detail later in this Declaration. At the outset, however, I will briefly summarize the nature of the work I did, and the principal conclusions I reached.

I. PRINCIPAL CONCLUSIONS.

3. My largest task was to determine the extent to which cable systems dropped or did not carry local broadcast stations between 1985 and October, 1992, when Congress enacted the must-carry provision. My empirical work is different from the empirical work done by plaintiffs' experts, in three very important respects. First,

plaintiffs' experts used *samples* of cable systems, from which they extrapolated and estimated carriage histories in the universe of cable systems. I attempted to use the *total universe* of *all* cable systems as the source of my data and analysis. Second, plaintiffs' experts generally rely upon a "snap shot" of cable carriage data at one point in time. Stanley Besen's expert report, for example, shows cable carriage in October, 1992, only. It does not show "drops" even for that period, and does not show carriage for any other period. Thus, it is not possible from plaintiffs' empirical data to observe trends in carriage histories over time. Nor is it possible, using their data, to reach any conclusions regarding the accuracy with which the 1988 FCC Survey estimated the scope of the problem described in that survey, because plaintiffs' data does not examine the period of time encompassed by that survey. In contrast, the data I used is essentially a "rolling history," which reflects carriage histories at six month intervals, beginning in 1985. This approach makes it possible to observe *trends* in carriage histories over time, and it also makes it possible, with the limitations described below, to evaluate the accuracy with which the 1988 FCC Survey estimated the scope of the problem examined by that survey. Third, the plaintiffs' experts defined "local" television station, for purposes of their study, by using a definition of "local" the FCC, the Copyright Office, and the Congress have *never* used for any purpose relating to cable regulation and/or cable copyright issues. Nor do any ratings services (such as Arbitron or Nielsen) use the definition of "local" chosen by the plaintiffs. *See* Expert Report of Stanley M. Besen at p. 4: "The definition of 'local' I intend to use . . . defined stations as local if they are in the same ADI as, and within 50 miles of, the cable system." That definition is not based on Nielsen standards for reportability or measureability. It is my understanding that Stanley Besen admitted in his deposition that his definition of "local" station was not the same as the definition of local station in the current must-carry provisions, nor the definition of local station in any previous must-carry requirements,

nor the broadcast market definitions used by Arbitron and Nielsen. Besen Dep. 273-276. Mr. Besen also admitted that his definition of "local" was less inclusive than the ADI-definition the 1992 Cable Act must-carry provisions are based on. Besen Dep. 278-79. Plaintiffs' experts also used a unique definition of measurable or reportable ratings for the purposes of including or excluding stations that would be considered in their carriage study.

4. Thus, plaintiffs' study of the carriage histories of "local" broadcast stations cannot be compared with the 1988 FCC Survey, because that survey generally used the pre-*Quincy* definition of "local" (*see* Appendix C to the 1988 FCC report, CR 10678), and that definition is quite different from the definition plaintiffs used. (The pre-*Quincy* definition of "local" used the definition of local that is used for copyright purposes.) In contrast, in my study I used the pre-*Quincy*/copyright definition of local that was generally used in the 1988 FCC Survey. In fact, the raw data in the information contained in the attachments and exhibits to this Declaration are taken directly from the filings all cable systems are required to make with the Copyright Office every six months. Accordingly, my study can be more readily compared with other studies or surveys using that pre-*Quincy*/copyright definition of "local" broadcast station, including the 1988 FCC Survey.

5. My conclusion is that the 1988 FCC Survey likely substantially *underestimated* the scope of the drop/non-carriage problem, and that the actual problem grew steadily and dramatically worse between the period of time covered by that survey and October, 1992, when Congress enacted the must-carry provision.

6. In February of 1988 four members of Congress asked the FCC to investigate the signal carriage practices of cable systems, and to report back to them by September 1, 1988. CR 10648. The FCC thereupon mailed a survey from to 8,504 cable systems and received 4,303 responses, approximately a 50% response rate. CR 10648. The form asked the cable systems to "list all

TV broadcast stations that would be entitled to carriage under the Commission's former must-carry rules that were in effect prior to July 19, 1985," when those rules were set aside by the *Quincy* decision. CR 10674, CR 10648, n. 2. The form then asked whether the cable system had "deleted or declined to carry" any of those stations. CR 10674. Finally, with respect to all such stations "that are not now carried,' the form asked the cable system to indicate which of those stations was "never carried," and for stations that had been carried but subsequently deleted, the "date deleted." CR 10675.

7. The survey did not ask cable systems to report drops or refusals of carriage that cocurred during a particular period of time. Rather, it asked for information concerning *all* drops or refusals to carry all stations that would be entitled to carriage under the pre-*Quincy* rules, if those stations had not been carried or were not being carried "as of" the date the cable operator completed the report. CR 10674. Thus, the survey was an open-ended request for information regarding all drops (and all non-carriage), at any time, of any broadcast station that would be entitled to carriage under the pre-*Quincy* rules.

8. It is not clear when the 4,303 responses from cable systems were completed, but the results had been tabulated and compiled into an FCC Report by September 1, 1988 (CR 10645), so it is reasonable to assume that most of the responses were probably completed by July of 1988, and tha the vast majority of the "drops" they reported occurred before June 30, 1988.

9. According to the FCC Report, the 4,303 cable systems who responded reported a total of 780 "incidences of cable systems dropping a station." CR 10654. The FCC noted that many therefore did *not* accurately report the information requested by the survey, and noted further the possibility of a "response bias," so that the responses of the cable systems who did respond to the survey might not be representative of the cable systems that did not respond. CR 10649-10650. Even assuming, however,

that the responding cable systems (approximately 50% of the sampled system) did accurately report all drops, and that the non-responding cable systems would have reported the same number of drops, those responses suggest that as of June 30, 1988, the universe of cable systems had engaged in approximately 1,500 incidences of dropping broadcast stations that would be entitled to carriage under the pre-*Quincy* rules. In fact, however, the copyright data suggests the *actual* incidences of drops was much higher than that number.

10. As Attachment Q hereto shows, based on data filed by cable systems in the Copyright Office, as of June 30, 1988, there had been a reported 3,473 incidences of drops of at least one *year* of 968 unique broadcast stations on 2,370 unique cable systems that were reported carried as local for copyright purposes at least once and would have been entitled to carriage under the pre-*Quincy* rules. Additional drops were reported, but for purposes of my study I only counted drops of at least one year. Accordingly, the 3,473 figure likely understates the actual drops for that period by a significant margin.

11. Thus, a *conservative* estimate is that the actual number of drop incidences that had occurred as of June 30, 1988 was likely closer to *double* that suggested by the 1988 FCC survey. And that is only "drops." Separate instances of "non-carriage" were reported in the FCC survey at a rate more than 30% higher than that reported for drops. This would suggest that there were, in *addition* to these "drops," approximately 4,525 instances of "non-carriage."

12. Furthermore, the problem grew steadily worse. The data contained in cable system filings in the Copyright Office shows that by June 30, 1989, the number of reported drop instances (of one year or longer) had increase from 3,473 to 4,545, and by June 30, 1992, the number had increased to 7,945. See Attachment Q hereto. Thus, between the end of the period studied by the FCC and June 30, 1992, four months before Congress enacted

must-carry, the number of reported drop instances of one year or longer had increased by 4,472. In short, by the time Congress enacted must-carry, the actual number of drop incidents was likely many times higher than the estimate derived from the FCC survey four years earlier.

13. Based on the response from the responding cable systems, the 1988 FCC report concluded that the "total number of [cable] systems" that *either* "dropped" *or* "denied carriage to one or more [local broadcast] stations" was 869. CR 10654. Thus, even if we were to double this 50% sample, the data reported by cable systems would suggest that in the universe of cable systems, as of approximately June 30, 1988, an estimated 1,700 different or unique cable systems had *either* dropped or denied carriage to one or more local broadcast stations.

14. That figure likely significantly understates the actual problem. For example, as of June 30, 1988, 2,370 different cable systems were reported to have *dropped* one or more local broadcast stations, and that figure does not include *denials* of carriage. *See* Exhibit CC to my April 21, 1995 report, which is summarized in Attachment Q hereto. Thus, as of June 30, 1988, the *actual* number of different cable systems that had dropped one or more local broadcast stations was likely significantly higher than the FCC Survey suggested. And the problem grew steadily worse. By June 30, 1992, the number of different cable systems that were reported to have dropped one or more local broadcast stations was 4,788, *more than double* the number reported four years earlier. *Id.*

15. Similarly, as of June 30, 1988, 968 different local broadcast stations had been dropped by one or more cable systems. *See* Exhibit CC to my April 21, 1995 report, and Attachment Q hereto. By June 30, 1992, that number had risen to 1,261. *Id.* Looked at another way, by June 30, 1992, most of the local broadcast stations in this country were reported to have been *dropped*, not just denied carriage, by at least one cable system.

16. Thus, by any measure (number of dropped stations, number of cable systems that had dropped stations, or number of instances of drops), it is very likely the problem was much worse than the 1988 FCC Survey suggested, and the problem grew steadily and substantially worse until Congress acted in 1992.

17. The most important measure is the number of cable subscribers affected by these drops. (If a cable system serves 1,000 subscribers and it drops two broadcast stations, those drops are counted as affecting 2,000 subscribers.) As of June 30, 1985, the total number of drop instances of one year or longer had affected 2,229,000 subscribers. *See* Attachment C, hereto. By June 30, 1988 (approximately the end of the period covered by the 1988 FCC Survey), the total number of drop instances had affected 25,371,000 subscribers. *Id.* By June 30, 1992, the total number of drop instances had affected 46,335,000 subscribers, an increase of twenty times from figures reported prior to the *Quincy* decision. *Id.* It is also important to note these figures reflect only the *net* subscribers impacted by drops that were current in each of the measurement periods, because any stations returned to carriage were removed from the totals presented. If the figures were presented on the basis of the gross cumulative numbers of systems, stations, and subscribers affected between 1985 and 1992, which is the way the 1988 FCC survey studied the problem, the numbers would be much higher.

18. In light of this data, it was certainly reasonable for Congress to conclude in October 1992 that a substantial number of cable systems had dropped a substantial number of local broadcast stations, that the problem had been growing steadily worse since at least 1985, and that if Congress did not enact a must carry requirement an increasingly greater number of local broadcast stations would be dropped from or not carried by cable systems. The data clearly indicates that this trend of an increasing number of stations, systems and subscribers affected by

drops and non-carriage of broadcast stations was reversed only after enactment of the must-carry requirement.

19. The data also clearly indicates that *new* stations which signed on air when no must-carry rules were in effect encountered considerable difficulty in gaining cable carriage. Using a conservative standard for determining eligibility for cable carriage, the data shows that 258 new stations that would be eligible for cable carriage signed on air between July, 1985 and July, 1992. By June 30, 1992, new independent stations were *not* being carried by systems serving 52% of the cable subscribers in their ADI markets within 35 miles. New educational stations were not being carried by systems serving 71% of the cable households in their ADI markets within 50 miles. And even new network affiliate stations were not being carried by systems serving 27% of the cable households in their ADI markets within 35 miles. These percentages are conservative because they allow cable systems a minimum of six months to begin carrying a new station before any carriage data is reported. These stations saw significant improvement in their cable carriage *after* enactment of must-carry requirement. *See* paragraphs 62-73, *infra*, and the materials referenced therein.

20. The total of amount of *non-carriage* reported for stations in their market areas (ADI for commercial stations, 50 miles for educational stations) increased significantly between 1985 and 1992, particularly for independents and educational stations, and that trend was reversed only after enactment of the must-carry requirement. The vast majority (as defined by numbers of subscribers) of non-carriage occurred on the larger cable systems. *See* paragraphs 54-59, *infra*, and the materials referenced therein.

* * * *

23. Reported additions of local broadcast stations since mid-1992, including new stations, totalled 5,670 instances by June 30, 1994. Even assuming *all* of these adds were due to must-carry, (some were no doubt the

result of retransmission consent agreement), these totals represent only 1.6% of estimated U.S. activated cable channel capacity as of that date. Accordingly, must-carry adds account for something less than 1.6% of total activated channel capacity.

II. HISTORICAL CABLE CARRIAGE OF BROADCAST STATIONS

24. Cable Data Corporation. In preparing the carriage findings reported below, I relied in most instances on data collected and maintained by Cable Data Corporation, which is located in Bethesda, Maryland. I have a longstanding relationship with Cable Data Corporation, and their data is the best available source of historical cable carriage information.

25. Cable Data Corporation is a private company that serves as a repository of information gathered from the cable system copyright filings generated by each U.S. cable system and filed with the Copyright & Licensing Division of The Library of Congress at the end of each six-month period in each calendar year. Each cable system is required to file a form semi-annually. The database stores a wide variety of information gathered from these filings going back to 1979, with a specific system identification number assigned to each cable system included in the database. Information included in the database includes number of subscribers, gross revenues, copyright royalties paid, broadcast station copyright status and carriage by individual cable system, system location by community, county and state, system owner, copyright form and other information.

* * * *

29. My personal experience with Cable Data Corporation dates back to 1985. Since that time, I have on many occasions used their database to understand specific concerns about copyright related to carriage of broadcast stations, as well as utilizing the information to understand a station's competitive position in the market versus

its competitors. I have also used the data to inform cable operators of potential mistakes or miscalculations of their copyright liability where a potential question was apparent. I also worked with Tom Larson, President of Cable Data, over the years to increase the amount of information presented, as well as to offer further refinements to enhance the usability of the reports generated. I have found Cable Data's information to have a high degree of accuracy and reliability, and it is commonly relied upon by the broadcast and cable industries. Cable Data clients include Motion Picture Association of America ("MPAA"), the National Association of Broadcasters ("NAB"), the National Cable Television Association ("NCTA"), Major League Baseball, and numerous broadcast groups and stations. Although this information is not perfect, it is clearly *the best and only historical source* for national carriage information concerning broadcast stations.

* * * *

36. The information from Cable Data indicates *most reported drops lasted in excess of one year,* in some cases up to as long as seven years. The data also indicates there were numerous instances where a station, once dropped, was unable to regain carriage prior to 1993 and the return of must-carry. (The drop history report for the commercial stations was produced in connection with NAB and INTV's April 14, 1995 disclosures, and the drop history report for the educational station group was produced in connection with the public broadcaster's April 14, 1995, disclosures.

* * * *

III. NEW SIGN-ONS AND DARK STATIONS

74. New commercial station sign-ons and stations going dark were examined for the period 1985-1994, with additional net commercial station on-air data examined for 1980-1994. A list of both new station sign-ons and dark stations was obtained from Warren Publishing. For sign-ons, *see* Exhibit H; for dark stations *see* Exhibit K.

The dark station list was supplemented based on additional information obtained through a variety of sources including Cable Data Corporation reports and further analysis. Cable Data Carriage History reports (Exhibit L) and ADI non-carriage reports (Exhibit M) are provided for the dark stations.

75. All stations known to have gone dark for technical reasons such as transmitter or antenna damage were excluded from the general analysis of year-to-year totals of dark stations, although specific information concerning stations that were cited as having such damage may be included as a supplement to the general data presented if believed to be relevant for specific stations. Also excluded were stations known to have been ordered off the air by FCC action, although again relevant information concerning those stations may be presented on a supplemental basis. In one additional known instance a license was returned to the FCC as part of a VHF/UHF station upgrade, and that station is not counted in the reported dark totals. Stations licensed outside the continental U.S. are also excluded from the dark station numbers.

76. The data indicates generally that from 1985 through 1987 the numbers of new stations beginning operations continued to increase. The largest percentage of these stations were independents, many of whom would become affiliated with the new Fox network, which began operations in 1986. Additonal network-affiliated stations were still being added in small television markets during this time, as well as some educational stations, but the number of new network-affiliated stations was a small percentage of the total group. Some foreign language stations also signed on in this period. The numbers of stations going off-the-air was generally limited in this period, with one dark station in 1985, two stations in 1986, and one station in 1987. New station commercial sign-ons were reported at 45 for 1985, 49 for 1986, and 40 for 1987. In 1988, however, the number of dark commercial stations increased to six, while new com-

mercial stations signing on declined to 39. In 1989, the number of dark commercial stations increased to seven, while new commercial sign-ons further declined to 34.

77. The first quarter of 1990 saw the first (and only) reported drop in the number of commercial stations operating measured on a quarterly basis during the period studied (*i.e.*, beginning in 1985). For the year, total commercial station sign-ons were only 18, while four additional commercial stations went dark. In 1991, the number of new commercial stations signing on increased to 20, while six additional commercial stations went dark. In 1992, 18 commercial stations signed on, while four additional commercial stations went dark. In 1993, the number of commercial stations reported as dark fell to three stations, while new stations sign-ons fell again to 10. In 1994, the number of stations reported going dark was zero, while new station sign-ons were nine. (It should be noted that because of the lead time between issuance of a construction permit and commencement of station operations, the number of new sign-ons in a given year may reflect market conidtions and events in earlier years). For a complete list by quarter of total stations on-air from 1985-1994, *see* Exhibit N. (The data also includes totals for UHF and VHF total stations, construction permits and applications pending.) *See* Attachment D hereto for a summary of commercial stations on air.

78. Analysis of this data generally indicates that *the number of new stations signing-on declined beginning in 1988, while the number of stations going dark began to escalate.* As noted above, in early 1990, the number of stations going dark actually exceeded those signing on for the first time in many years, causing a net decrease in the number of commercial stations in operation. The year 1990 also saw the fewest number of net commercial station gains (6) recorded since 1978. Commercial station growth continued to be slower through the early 1990's again falling to less than single digit net growth in 1993.

79. Cable carriage or the lack thereof can be an important factor in determining a station's ability to remain on the air. Although it is not possible to say based on the available data that lack of cable carriage was the sole reason for a station's failure, one can reasonably infer that a lack of carriage or drops by cable systems serving a substantial portion of the market can be a major factor in a station's continuing viability. The stations below appeared to have significant cable problems prior to going dark.

80. Examples of significant drops and non-carriage can be found for a number of stations included in the dark group. This information is derived from cable data and personal interviews with some stations:

KSKN, Channel 22, Spokane, WA

> Cable Data records indicate the station was dropped by the major cable system in Spokane (Cox) in late 1987 prior to going off the air in 1988.

WCOM, Channel 68, Mansfield, OH

> Was reported as unable to get almost any cable carriage after signing on in 1988; left air in 1989 after 15 months.

WINM, Channel 63, Angola, IN

> Signed on in 1983, was reported as able to achieve only minimal market carriage before leaving air in early 1986. After signing back on in mid-1988 the station was unable to gain most local carriage prior to the return of must-carry in 1993. Reported carriage now six times higher than pre-must-carry peak.

WSCO, Channel 14, Suring, WI

> After leaving the air with transmitter damage for a year in 1988, the station was reported as unable to regain most of its previous cable carriage and went dark again in 1991.

WUXA, Channel 30, Portsmouth, OH

Reported as not carried on all but two market cable systems, the station went dark in 1989 after a year of operation.

WCCL, Channel 49, New Orleans, LA

Had major difficulty getting on the area's largest system in Jefferson Parrish (Cox). Went dark after a year of operation.

WHRC, Channel 46, Norwell, MA

Not reported as carried on any systems for the first two years of operation after signing on in late 1986; only received carriage from two systems for one year or less before going dark in early 1990.

WJFB, Channel 66, Lebanon, TN

Station not reported as carried on any systems for first 18 months of operation after signing on in mid-1987, only received carriage on three systems total during all operations prior to going dark in 1991 after reportedly being hit by lightning. Not carried on numerous nearby cable systems including major Nashville system (Viacom).

WJTA, Channel 26, Jamestown, NY

Received no reported cable carriage for entire time station was on-air from 1988 through 1991. Nearby systems not carrying station included Paragon, Cablevision Industries, and Time-Warner.

KCNS, Channel 38, San Francisco, CA

After going off the air briefly at the end of 1985 at the order of the FCC, the station's new owners proceeded to lose nearly all of their cable carriage throughout 1986 and were off nearly all market systems through mid-1991. The station's carriage after must-carry is now at over 1,000,000 homes, and the station reports it has added numerous staff and upgraded its programming considerably over the past two years.

KTFO, Channel 41, Tulsa, OK

This station signed on the air in 1981. Cable Data records indicate it was dropped by the major cable system serving Tulsa (TCI/United) in 1987. The station went dark in 1989.

See Exhibits L & M.

81. Commercial stations going dark were generally concentrated in the independent group, although there were same small-market network-affiliated stations as well. Measured in two-year increments beginning in 1980, net growth in on-air commercial stations can be seen below:

START-END	# COMMERCIAL STATIONS	NET # GROWTH	AVG ANNUAL STATIONS
1980-1981	734/777	43	2.9%
1982-1983	777/841	64	4.1%
1984-1985	841/919	78	5.5%
1986-1987	919/1028	109	5.9%
1988-1989	1028/1092	64	3.1%
1990-1991	1092/1118	26	1.2%
1992-1993	1118/1145	27	1.2%
1994	1145/1161	16	1.4%

See Exhibit O.

82. When averaged at two year intervals, *the net growt rate in on-air broadcast stations has generally been declining since 1987*, and the annual rate of growth by 1990-1991 was less than one-quarter of its peak in the mid-1980's Similarly, the number of stations going dark began to increase significantly in 1988 and remained high through 1992. Thus, by October of 1992 Congress could reasonably conclude that the growth of commercial stations had peaked, and was steadily declining.

* * * *

98. An examination of network versus independent viewing in the fifteen markets shows that independent sta-

tions, who are more likely to have gained cable carriage as a result of must-carry, have made significant improvements, up an average 9.0% in cable HH ratings between 1992 and 1994, while the major network-affiliated stations, who were not as likely to have gained carriage as a result of must-carry, have not reported improved ratings (their NALO ratings actually decreased an average 8.1%). Further examination shows that the largest increases in ratings have gone to the four types of listed independent stations historically having the most difficulty in obtaining cable carriage prior to the return of must-carry.

99. When summarized, the following picture emerges. Since the return of must-carry, the stations most likely to benefit from must-carry to gain cable carriage have seen the largest increases of any broadcast station types measured either by average percentage increases in cable HH ratings, or by total TV HH cumes. Of the 97 independent and educational stations examined, 42 had increased cable ratings and 65 had increased total cumes. Only 10 had cable ratings decreases, while only 8 had lower total cume levels.

* * * *

110. On an overall basis, for the universe of unique cable systems for which data is provided for one or more periods between 1992-2 and 94-1, 73% added no broadcast stations, 18% added one station, 6% added two stations, 2% added three stations, and 1% added four or more stations. The total number of channels generally known to be activated in the universe is estimated in excess of 350,000. The total number of broadcast stations on air prior to the dates mentioned above that were added through June 30, 1994 (1994-1) is reported to be 5,141. It is known through the drop history data provided that the net increase in local broadcast stations carried on cable systems would be significantly decreased if ineligible broadcast stations dropepd from systems in these two periods in order to make room for must-carry stations were subtracted from the total presented. It is also known

that additional channel capacity not counted as activated existed on numerous systems during the periods considered, and if taken in that light, consumption of total usable channel capacity would be an even lower percentage. Nevertheless, the number of stations added to the systems through the end of June 1994 (i.e. period 1994-1) of stations on-air prior to must-carry as defined above represent only 1.45% of the reported activated channel capacity of these systems. *New* stations not included in the totals above have gained an additional 529 total system adds. However, even adding those new stations to the total brings the total number of stations added to cable system between the return of must-carry and June 30, 1994, to 5,670, or an additional .14% of activated channel capacity.

111. In other words, *on a national basis, the percentage of activated channel capacity devoted to broadcast stations added to cable systems during the period after must-carry requirements became effective through June 20, 1994, amounts to only 1.59% of total activated channel capacity.* And at least some of the added stations were *not* added pursuant to the must-carry provision, but pursuant to the retransmission consent provision. *Accordingly, must-carry adds account for something less than 1.59% of total activated channel capacity.*

* * * *

May 23, 1995

/s/ Tom Meek
TOM MEEK

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.A

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

AFFIDAVIT OF LUCIE SALHANY

Lucie Salhany, being first duly sworn, deposes and states as follows:

1. My name is Lucie Salhany. I am the President and Chief Executive Officer of the new United Paramount Network ("UPN").

2. UPN is a new network of broadcast television stations, officially "launched" in January of 1995.

* * * *

8. Based on my experience in broadcasting, and in particular on my experience as President of UPN, I have a strong opinion about the importance of cable carriage to the viability of a new broadcast network, and about the importance of the "must carry" provision of the 1992 Cable Act to such carriage.

9. In order to be viable, a broadcast network such as UPN requires that its affiliated broadcast stations be carried by cable operators in their respective markets. That is so because over 60% of American TV households are served by cable, and many of those TV households no longer have an antenna capable of receiving over-the-air signals. Thus, if a broadcast station is not carried on the cable system in its market, that broadcast station would be deprived of a substantial portion of its potential audience.

10. Broadcast networks are dependent on advertising revenue for all of their operating revenue. Advertising

revenue, in turn, is solely dependent on the number and type of TV viewers who will potentially be exposed to the advertisement. The older U.S. TV networks (ABC, CBS and NBC) can reach virtually 100% of U.S. viewers through their affiliated stations; Fox, an eight-year-old network, reaches almost as many viewers through its affiliate system. Any broadcast network seeking to compete with those four networks would be at a competitive disadvantage if it reached fewer viewers. And, in my view, a network must reach at least 80% of the U.S. audience just to be viable in the national TV advertising marketplace.

11. To assure that a network advertiser is reaching the audience it seeks, it is important that as much of a network's coverage as possible be "in pattern" (i.e. broadcast at the same time on the same night in all local markets), particularly for a new network seeking to establish a "network" identity with advertisers. Thus, for such a network, simultaneous carriage by cable systems, is critical.

12. In general, cable operators are less likely to drop or refuse to carry an established broadcast station than they are to drop or refuse to carry a new or small broadcast station. For that reason, it is largely the newer or smaller broadcast stations who have utilized the "must carry" provision of the 1992 Cable Act; the older, more established broadcast stations have largely been carried voluntarily by cable operators pursuant to the "retransmission consent" provision of that Act.

13. When we thought about launching the UPN network, we quickly realized that many of the established broadcast stations were already affiliated with one of the four networks. This meant, in general, that the affiliate stations of UPN would consist largely of broadcast stations that were newer, smaller, weaker or less established than the affiliates of the existing networks.

14. This meant, as a consequence, that the potential affiliate stations for the UPN network were more likely to be dependent on the "must carry" provisions of the Cable Act for carriage on the cable systems in their respective markets. Put another way, absent the "must carry" rule, there would have been less assurance to those newer, smaller, or weaker stations (and thus to UPN and to the advertisers who might advertise on UPN) that those broadcast stations would be carried on the cable systems in their respective markets.

15. A critical consideration to us in the launch of the UPN network was the assurance provided by the "must carry" rules that potential affiliates of UPN could achieve broad cable carriage. In a very real and material sense, "must carry" has thus reduced the risk attendant to a new network start-up and thereby encouraged the entry of the UPN network.

* * * *

May 23, 1995

LUCIE SALHANY
/s/ Lucie Salhany

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.A

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF DAVID E. SCHUTZ

I, David E. Schutz, pursuant to 28 U.S.C. § 1746, hereby depose and say:

1. I am an economic and financial consultant in the commercial broadcasting industry. In the past 23 years, I have conducted over 600 economic/financial studies dealing with different aspects of commercial radio and television stations in the United States. My clients have been station owners, prospective buyers, investors, financial institutions and government agencies. I have published numerous articles concerned with matters of broadcast finance and operations. I have testified before the telecommunications subcommittee of the U.S. House of Representatives and have been recognized as an expert in various broadcast-related financial/economic matters in several Federal and State Courts.

2. I hold a Bachelor of Science degree in Television/Radio from Ithaca College and a Master of Business Administration degree with a specialization in finance from the American University. I have been named a Taggart Fellow in advanced financial studies at the Graduate School of Business Administration of New York University. A major portion of my consulting work involves the critical review of broadcast station operations. This includes a review of historic financial operating statements, financial projections, overall station management proficiency and technical facility reviews. I have also worked as a technical consultant to numerous broadcasting stations. This work included the preparation and submission of FCC technical documents.

3. In the matter of *Turner Broadcasting System, Inc. v. FCC*, I have undertaken research in three interrelated areas:

a. I researched the relative interest of the financial community at large in investing in either the construction of new broadcast television stations, and/or acquisition financing for some smaller established stations which lacked strong financial operating histories and had uncertain long-term access to cable television carriage.

b. I studied the impact of cable television carriage upon the ability of new broadcast television station licensees to construct new stations, including practical examinations of the effect that access to cable carriage will likely have upon their revenues, programming, and ability to raise construction capital for the new stations.

c. I examined the impact, both operational and financial, of changing cable carriage levels on a number of broadcast television stations. "Changing carriage levels" refer to (1) increases in cable carriage by cable systems, (2) refusals or denials by cable systems to carry broadcast stations, (3) drops of broadcast stations by cable systems, and (4) channel repositioning by cable systems.

4. Both my methodology and the materials upon which I relied in forming these conclusions are described in the report I submitted in this case. My report is attached thereto as Exhibit A.

5. In general, my conclusions are based upon my professional experience in the broadcast industry, the formal and informal interviews and discussions I have conducted over the past four months, and my review of documents produced by certain broadcast stations. As demonstrated in my report, my conclusions are supported by the experiences of individual broadcast stations, some of which are discussed in this declaration as well.

6. As explained more fully below, my conclusions may be summarized as follows:

The financial community understands the importance of cable carriage to a broadcast station's revenues. Low levels of cable carriage can depress revenues to the point where its economic viability is doubtful. In the absence of assurances of carriage prior to implementation of the 1992 Cable Act, financial and lending institutions were extremely reluctant to provide outside capital to new broadcast stations.

Construction permit holders uniformly felt that the level of cable carriage available to a station affects the capital available for construction and start-up, the quality of programming and volume of staffing, and ultimately, its economic viability.

Existing broadcast stations have been significantly affected by cable carriage—or more pertinently, the lack thereof. Stations experienced considerable difficulty obtaining carriage from local cable systems in the absence of a mandate by Congress or the FCC. Stations that had been carried on a full-time basis under the previous must carry rules were given part-time carriage or were dropped by cable systems, often without giving a reason, and new stations were often refused carriage. Generally speaking, a station's ability to operate at a profit (and be a viable business enterprise) tracked levels of carriage. This is true because carriage levels affect revenues: when revenues were sufficient, stations could afford to air more local programming and higher-quality syndicated programming and did so; in the absence of sufficient revenues, however, the quality of programming and quantity of staffing declined. In some cases, stations went bankrupt and ceased operations because the lack of carriage depressed revenues so profoundly.

Overview of the Broadcast Television Industry

7. In the television industry, unlike its radio counterpart, viewer loyalty attaches to particular programs rather than stations. Thus, in the span of two or three hours,

viewers may watch as many as six programs on six different stations (or channels). The primary objective of broadcast television stations in the United States is to make their programming available to the widest possible potential audience so that television viewers will find the program content of interest and will remained tuned to the station.

8. As a business enterprise, television broadcasters seek to generate a stream of revenues to support their business activities and earn a profit from three potential sources:

a. Sale of short advertisements or promotional announcements within programs;

b. Sales of blocks of program time to independent program producers; and

c. Direct cash contributions from viewers or businesses.

9. Regardless of which source of revenue a television broadcaster utilizes, it is in a station's best interest to maximize the size of the potential audience which can view its programming. In the years before the extensive growth of cable television, broadcasters relied upon their over-the-air signal as their sole means of program distribution. In this regard, they expended large sums of money to maximize the size of the signal coverage area available from their over-the-air transmitter facilities, subject to FCC technical interference constraints.

10. The growth in cable television during the past 20 years, however, has required broadcasters to use a second means of signal distribution: cable carriage. The cable television industry originated as an adjunct to traditional broadcasting. Originally, it served as little more than a large centralized antenna to overcome TV reception problems caused by mountainous terrain and similar factors. Today, however, over half of the television

households (62%) in the United States are cable subscribers. Cable systems are the primary gatekeeper to television. This means that they effectively control all access to television receivers in subscribing households, and consequently, to television programming services in the households which subscribe to their services. A local television broadcaster whose signal is not carried by cable television systems in its marketing area finds itself effectively shut out of at least half of the potential viewers in its marketplace. This has a pronounced deleterious impact upon the station's revenues, the quality of the programming service it can provide, and in some cases threatens the primary economic viability of the broadcast station itself.

11. Congress addressed these issues by passing two pieces of legislation which, taken together, help to ensure that a broadcast station's signal is received by all cable households in its market. The Cable Consumer Protection and Competition Act of 1992 specifically requires cable systems to carry the signal of local television broadcasters and protects the cable channel positions of broadcast stations already carried on cable from arbitrary and damaging reassignments in cable channel position. The Satellite Home Viewer Act (1994) effectively removed substantial copyright payment obligations for broadcasters whose signals were carried on cable systems beyond the broadcasters' local carriage zone. This eliminated copyright payments for cable carriage of broadcast station signals on most cable systems. This generally made broadcast station carriage economically feasible on all of the cable systems in a marketplace regardless of the geographical size of that marketplace.

Impact of Cable Carriage Upon
Broadcast Stations' Ability to Obtain
Financing For New Stations

12. Broadcast television stations typically have minimum values of at least several million dollars. Even in

the case of very small stations it is normal to expend at least two to three million dollars to obtain the FCC license and acquire the towers, antennas, transmitters, and acquire studio technical equipment required to operate a broadcast television station. Existing broadcast stations with either demonstrated histories of profitability or reasonable business prospects for some routinely are sold for prices in excess of ten million dollars. Some very large broadcast television stations have been sold for prices in excess of $500 million dollars.

13. Because of the large sums of money required to construct even a new small-market television station, outside financing is normally required. During the past 15 years several commercial banks, finance companies, insurance companies and venture capital partnerships have developed a specialization in the broadcasting industry and have invested or lent hundreds of millions of dollars to individual stations.

14. Lending and/or investing in the television broadcasting industry requires a financial institution to accept the proposition that the collateral value of a station (fair market value) is often far above the salvage (liquidation) value of the property, plant and equipment which comprise the station's fixed assets. This is typical of service businesses which generate high levels of profitability and operates with exclusive government franchises. This means that operating profits represent the sole method for orderly repayment of debt or equity investments. Thus, financial institutions are extremely concerned with any external factor which could arbitrarily restrict the revenue and profit generating capabilities of the broadcast stations they choose to invest in.

15. Within both the broadcasting industry and the broadcasting financial community, there is universal acknowledgement that cable carriage has a significant impact upon an individual station's business operations and its profitability. However, cable carriage—unlike programming, staffing, marketing, and related decisions—is

a crucial operating parameter over which an individual broadcast station potentially has no control. In fact, this factor is controlled by a business entity—the local cable system—that may have business objectives that place it in direct competition with the business interests of local television broadcasters. (For example, broadcast stations and cable systems can and do compete for the sale of spot advertising time.)

16. The financial community is extremely reluctant to invest in broadcast stations where cable carriage cannot be assured. Knowledgeable financial institutions have generally scorned investments in new television stations since 1985: it is well-known that most of these new stations, absent the assurance of cable carriage provided by must carry regulations, have had difficulty in obtaining high initial levels of cable carriage. As a result of these carriage problems the stations have not achieved their anticipated levels of revenues and profitability which frequently led to substantial losses for their lenders and investors.

17. Today, the financial community still remains highly skeptical of investments in either new broadcast television stations or established stations with uncertain financial performance because of continuing uncertainties regarding the long-term existence of must carry regulations. In the instances where the financial community becomes involved in the construction of new stations or in providing acquisition financing for the transfer of ownership of stations without demonstrated histories of strong operating profits, the financial community requires absolute assurance that a station has statutory rights to claim efficient cable carriage and to be free of threats of arbitrary channel reassignments by cable operators.

These conclusions were borne out by the interviews I conducted with individual broadcast stations and construction permitees. As discussed below, several stations could not obtain outside financing as start-up capital in the pre-must carry environment. Some turned to Home

Shopping or other networks for revenues; others simply were not able to survive.

18. I do not know of a single significant financial institution that is not concerned with cable carriage as it involves a loan or investment to a television station. Although these institutions may have less concern about cable carriage when the investment is in a profitable established television broadcast station (usually affiliated with one of the four national networks), they become far more skeptical, nervous and reluctant to fund new stations, stations which lack strong network affiliations, or those which otherwise might not be assured of cable carriage by the local cable systems.[1]

19. In my opinion, this situation will not change until the current cloud of uncertainty regarding judicial review of the current body of must carry regulations is resolved in a manner that provides individual broadcast stations with assurance that they will not be subjected to arbitrary treatment by the cable system operators upon whom they must depend for signal distribution.

Impact of Cable Carriage Upon
Broadcast Stations' Ability
to Construct New Stations

20. Access to cable television subscribers is an essential operating consideration in the decision to construct new stations. Despite the popular belief that the over-the-air broadcast spectrum is already fully occupied by stations, this is not completely true. I reviewed the FCC's records and found that it has authorized permits for the construction of over 100 additional new commercial broadcast television stations. Most of these new station licenses have been awarded to private individuals or

[1] Some broadcast equipment manufacturers will provide limited financing for purchases of their equipment. Because these activities are limited to the purchase price of the equipment they are not considered significant sources of debt or equity capital to the broadcasting industry at large.

smaller companies with little or no other ownership interest in the TV broadcasting industry. This was a direct result of the FCC's long standing policies intended to encourage the entry of new station owners into the television industry as well as of policies intended to increase the diversity in programming and editorial content.

21. Without exception, the Construction Permit holders felt that cable carriage was important to their station's future business operations. To many, carriage is essential to the successful completion of their construction as well as to their future economic viability. Most did not believe that they could attain any significant level of cable cariage in the absence of definitive must carry regulations. Many of the Construction Permit holders had attempted to contact local cable systems so as to assure immediate cable carriage when the stations begin broadcast operations. In most cases, the cable systems had not provided absolute assurances that they will immediately carry the new station's programming. Without firm assurances of long term cable carriage, most have experienced difficulty in even obtaining the basic start-up capital required to construct their stations.

22. Overwhelmingly, the permit holders believed that the overall quality of the programming material they will provide will be directly influenced by cable carriage levels. Once operating, any reductions in cable carriage are expected to produce reductions in the quality of programming. This was most evident in the area of locally produced programming, including news and public affairs, where reductions would be almost immediate. Operating expenses at the new stations could also be increased as a result of low cable carriage. This results from the fact that the station will have to devote additional resources to publicize and promote its existence to potential viewers and advertisers among non-cable households. It might also have to incur the potential costs for distribution of small receiving antennas in the hopes that these might enhance the pictures quality avail-

able to non-cable, over-the-air viewers. One of the stations indicated that its ability to obtain a Fox network affiliation is contingent upon its ability to gain carriage on the cable systems in a nearby city.

Impact of Cable Carriage Upon Broadcast Stations' Ability To Operate As Viable Business Enterprises

23. Cable carriage is even more important once a broadcast station is up and running because carriage levels dictate audience levels (*i.e.*, the total number of viewers who can receive the station) and audience levels, both actual and potential, ultimately drive revenues.

24. All of the stations I interviewed indicated that cable carriage was extremely important in their operation and their ability to attract an audience. Most felt that cable carriage was absolutely essential to their operations and continuing economic viability.

25. The stations reported numerous difficulties in gaining voluntary cable carriage in the time span between 1987 and 1992 when there were no stattuory or FCC requirements for cable carriage of broadcast television stations. All of the stations indicated that they had requested full-time cable carriage within their local service areas. Cable operators offered little reason to the stations when they denied these carriage requests.

26. Local broadcast stations and local cable systems tend to compete with each other for advertising sales revenues. Cable systems thus have an economic incentive for attempting to retard the circulation of local broadcast television stations when the two compete for advertising or program time sales. Several stations (such as KHIZ, WAYK, WLIG) have filed antitrust lawsuits against local cable systems on these grounds. In addition, KADY was expresly refused carriage for this very reason, as was WCVX. WLIG competed with Cablevision (which refused it carriage in Nasau County for a number of years) for viewers of their *local news* programming. Also, in

areas with Hispanic populations, cable systems will refuse to carry local Spanish-language stations because they are already carrying limited Spanish-language programming generated by cable program services. Similarly, KWHB, KWHD and KWHE, which carry family and religious programming, were refused carriage by cable systems which either were carrying or shortly thereafter began to carry VISN, a cable-only religious program network.

27. The absence of statutory requirements for cable carriage of broadcast stations during the period 1985 to 1992, as well as uncertainties regarding the judicial review of the current must carry regulation, had a devastating impact upon new stations that began operation after 1984. Many such stations indicated that a continuation of the former must carry regulations was a consistent assumption in their financing and operational plans. Had must carry not been in existence att he time they were building their stations, most would have curtailed their construction and operating plans. In some cases, they would not have undertaken construction of the station at all.

28. For example, WCVX signed on the air on July 13, 1985—the day the *Quincy* decision invalidating the must carry rules was announced. Consequently, WCVX experienced enormous difficulty gaining carriage on surrounding cable systems. Cable carriage was enormously important to WCVX's viability; the station operated on Cape Cod where almost all television viewers subscribe to cable. Without cable carriage, WCVX was precluded from reaching almost all of the television viewers on the Cape. WCVX's owners lost their investment in the station and the station went bankrupt and was forced to suspend broadcast operations.

29. Similarly, WCCL in New Orleans, Louisiana came on the air in 1989. Institutional investors who had initially expressed interest in the station withdrew their funds when WCCL's initial efforts to gain carriage were

rejected by the local cable systems. Ultimately, the station was only able to secure * * * needed to build and initially operate the station and accomplished that through debt financing and equipment leases. When cable systems —particularly Cox Cable of Jefferson Parish—continued to refuse WCCL carriage, the station could not pay its bills, filed for bankruptcy protection and ultimately ceased operations.

30. WCOM made clear that the investor group would not have undertaken construction of the station in 1986 had they known that the must carry rules would be invalidated. The station secured financing from banks and other outside sources on the explicit assumption that must carry would assure cable carriage. When the interim must carry rules were subsequently struck down and the station could not gain a significant audience due to low cable carriage, it filed for bankruptcy.

31. Restrictions in the availability of outside capital had an impact on the programming activities of many of these new stations. In some cases, this forced the cancellation of plans for increased levels of locally produced news and information programming and the substitution of interim low cost income-generating alternatives such as Home Shopping and infomercials. For example, KMCI in Lawrence, Kansas was formulating its construction and operation plans during a time when the must carry rules were in place. By the time KMCI came on the air in 1988, however, the must carry rules had been struck down. KMCI could not get start-up capital from outside sources and, in desperation, turned to the Home Shopping Network for revenues. KMCI remained unable to gain cable carriage until 1993 when the new legislation came into effect.

32. Indeed, in many cases, stations that are involved in selling large blocks of time either to national networks (Home Shopping, Spanish Language) or producers of infomercials indicated that they are doing so as part of

a survival strategy. This mode of operation was intended to permit them to pay off accumulated debt, survive, and accumulate sufficient capital so as to expand their local programming efforts. This is not an unrealistic hope as some stations have succeeded in this strategy and been able to substitute locally originated, advertising supported programming materials. For example, KXLI had been a home shopping station for several years prior to the reimposition of must carry in 1993. With the larger potential viewer base provided by higher cable carriage the station has been able to undertake a more traditional, entertainment program format. * * *

33. Other stations experienced a significant decrease in the amounts of cable carriage after the must carry rules were invalidated, which caused a downturn in revenues. Staff levels had to be reduced and programming had to be eliminated. Often, it was the locally produced programming, such as newscasts and public affairs shows, which had to be eliminated. WRDG in Burlington, North Carolina lost significant cable carriage after the must carry rules were invalidated and consequently, reduced staffing and programming. WTWS lost about two-thirds of its cable carriage in 1991; the resulting decline in revenues necessitated staffing cust of nearly 75%.

34. In addition to refusals and drops by cable systems, broadcast stations suffered another type of harm: During the period 1985-1994, many broadcast stations suddenly experienced arbitrary and frequent shifting in their cable channel asignments. This "channel shifting" had a significant negative impact on the audience size and revenues of many broadcast stations.

35. The specific cable channel on which a broadcast station is caried is very important. Placement in the channel 2-13 range is considered highly advantageous by most broadcasters. These same cable channels are equally coveted by cable program services. During the 1988-1992 period, after many years of undisturbed enjoyment

of specific cable channels, frequently on the lower channel assignments, many broadcasters sudenly found themselves placed on high channels by cable operators. Their banishment to "cable Siberia" was usually motivated by a cable system's desire to place cable networks in these coveted channel positions.

36. Channel movements are very damaging to the goodwill that broadcasters carefully develop as part of their "brand identity" with cable viewers. When broadcast stations are moved multiple times on cable systems, as happened to some stations, the injury to their goodwill is further increased. Ultimately, these cable channel reassignments detract from a broadcast station's audience levels, revenues and profitability.

37. There are other reasons why arbitrary channel reassignments by cable operators are harmful to broadcasters. First and foremost among these is that broadcast stations spend considerable time and energy to promote their station's channel location in the minds of viewers so that they know where to tune to watch their favorite programs. Channel changes disrupt these carefully nurtured viewing patterns, resulting in lower ratings.

38. A second reason for concern about channel repositioning is that carriage in the first twelve channels does not require the use of a converter or "cable ready" television set in the majority of cable systems. This means that the low channels have a higher possibility of being viewed on older model television sets. These are usually the second or third set in a household. Thus, as a simple function of the number of televisions and their capabilities, the lower channels will generally have better overall viewing levels than higher channels. Stations placed on the higher channels will suffer from less viewing.

39. For example, KBHK is a very successful and stable UHF independent station in the San Francisco market which spent years developing an identify as "Cable

Channel 12." When some of the local cable systems, particularly TCI-owned ssytems, moved KBHK to other, higher channels (above 13), KBHK lost viewers in the affected cable systems.

40. Most of the stations have experienced increases in cable carriage since implementation of the must carry regulations in 1993. However, despite regulatory requirements that they be carried, local broadcasters continue to experience significant difficulty obtaining the carriage to which they are entitled. WTLK in Rome, Georgia was consistently refused carriage by the two major cable systems in the Atlanta area: Wometco and Summit. Once the must carry legislation was passed, WTLK expected to be carried but Wometco and Summit still refused. Eventually, WTLK had to file "must carry complaints" with the FCC. KNWS, the all-news broadcast station in Houston, had similar problems. The largest cable system in Houston—Prime Cable—refused to carry KNWS as a must carry station. KNWS ultimately filed a "must carry complaint" on which it prevailed.

41. Increases in cable carriage normally produced a rise in the station's viewing level as reported by the Nielsen rating service. This is important to a station's spot advertising revenues because spot advertisers prefer definitive independent research estimating the size of the audience likely to see their advertising messages which are inserted in ordinary entertainment programming. In the absence of definitive Nielsen audience data, spot advertisers will use estimates of the total number of households (that is, reach) that can be exposed to their message as an important secondary statistic to guide these purchase decisions. Stations are thus frequently required to provide precise cable carriage numbers indicative of cable systems carrying the station.

42. The purchasers of blocks of programs time have little interest in precise Nielsen audience levels. They are

concerned with the total number of households, both cable and non-cable, which can potentially view a broadcast station's signal. Therefore, they often require detailed listings of the indivadual cable ssytems and number of subscribers therein as a condition for purchasing time on the broadcast station.

43. Increased cable carriage resulted in higher revenues which have frequently been reinvested for improvements in programming so that the overall quality of the service rendered to television viewers was improved. These changes manifest themselves in several ways. In some cases, there is an increase in locally produced news and/or public affairs programs. For example, WGTW is now able to expand its programming. Similarly, WLIG has been able to add several news and public affairs programs as a result of gaining increased cable carriage and revenues. WYED has also been able to inaugurate a daily local news program as a result of increased revenues from carriage. KCEC, a Spanish-language station, has been able to institute its first local news program serving the local Hispanic population.

44. There is also an increase in employment at the stations. WRDG's employment levels fell when it lost carriage after *Quincy* and then rose again as carriage levels increased as a result of must carry. Finally, I have seen improvements in the quality of the syndicated programming being broadcast (evidenced by an increase in either cash payments for programming or the number of barter programs which have become available as a result of the rise in potential cable audience reach).

45. Uncertainties regarding the reputation of the must carry rules has given rise to another interesting phenomenon. The newer affiliation contracts between the major networks (NBC, CBS, Fox, etc.) and individual broadcast stations contain provisions which reflect the network's concerns about the longevity of the must carry provisions of current statutes. Specifically, the contracts authorize

the *direct* delivery of the network's program service to cable systems if the network's local broadcast station affiliate is no longer carried on that cable system. This contract provision concerns many broadcasters because it provides a potential means for their valuable national program service to bypass reliance upon them for distribution of network programming within the broadcast station's service area. Network affiliation contracts are a valuable asset to broadcasters because of the exclusive exhibition rights which they provide within a station's service area. Any action which detracts from a station's exclusive local distribution rights for its network programming diminishes the value of that affiliation contract and thereby hurts the local broadcaster. One recent example of this phenomenon is KCEC's contract with the Univision Network.

46. Finally, the must carry provisions have had a positive impact upon the market value of broadcast stations as expressed by the purchase price. KTFH, for example, was sold recently for * * * prior to implementation of must carry, the highest serious offer received by the station was * * * WTLK recently sold for * * * in the absence of cable carriage, that price would have been less than half.

Conclusion

47. A loss of the must carry legislation would likely result in a fairly immediate and profound loss of cable carriage for most stations. This would in turn reduce revenues to the point that deficit operation would be probable, and could jeopardize the continuing economic viability and operation of many stations.

Under penalty of perjury, I declare the foregoing to be true and accurate.

Executed on May 23, 1995

/s/ David E. Schutz
DAVID E. SCHUTZ

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

MEMORANDUM OF NATIONAL CABLE TELEVISION ASSOCIATION, INC. IN SUPPORT OF PLAINTIFFS' MOTIONS FOR SUMMARY JUDGMENT

* * * *

[Exhibit B]

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF PETER D. SHAPIRO

1. I am Dr. Peter D. Shapiro, senior consultant in cable and telecommunications at Arthur D. Little, Inc., an international management and technology consulting firm based in Cambridge, Massachusetts, which helps corporations, institutions and governments meet the challenges of today's complex and rapidly evolving marketplace. Arthur D. Little employs 2,700 staff members in 36 offices and laboratories worldwide.

2. I received my Ph.D., in Communications Research from Stanford University, where my doctoral thesis explored development of cable TV programming networks, and my B.A. from the University of British Columbia in Vancouver.

3. I advise cable TV operators, telecommunications carriers, equipment and service vendors, financial institutions and government agencies, in the United States an in many other countries.

4. For Arthur D. Little, I have directed numerous assignments on marketing strategy, market entry options, and opportunities emerging with changes in the cable and telecommunications industries. For example, I directed a detailed assignment of the FCC's methodology for cable rate re-regulation. I also directed valuations of cable TV intangible assets, for major cable MSOs involved in landmark tax litigation. I helped a new venture to explore video-on-demand programming options and competitive environment. I provided an analytical basis for development of cable market entry strategy, including financial

modeling of different cable system scenarios, for a telephone company in Latin America. I also structured a proposal for multichannel premium TV services for a license applicant in Malaysia.

5. I assisted Governments in Hong Kong and in Malta to evaluate their cable TV options. I was the principal author of a report on prospects for the cable industry that was presented at the opening session of the 1985 annual convention of the National Cable TV Association. My international experience includes assignments in Australia, China, Egypt, Hong Kong, Hungary, Malta, New Zealand, Papua New Guinea, Malaysia, the Philippines, Singapore, Thailand, Mexico, and Venezuela.

6. I have directed assignments involving telecommunications areas, including:

- Alternative local access
- Private switched network services
- Satellite services and markets
- Network management systems
- Demand for capacity in long-haul fiber optic networks
- Local access charge system

7. Prior to joining Arthur D. Little in 1974, I was Research Fellow in the Harvard University Program on Information Technologies and Public Policy.

8. A survey of U.S. information industries, which I co-authored, appeared as a feature article in a yearbook (1975) of the Encyclopedia Britannica and his article on relationships between industrial development and telecommunications appeared in IEEE Transactions on Communications.

9. I have published the following articles and reports during the last 10 years:

"Cable ready to enter picture," Boston Business Journal, Sept. 9-15, 1994, p.24.

Evaluation of FCC Methodology for 1994 Rate Order, Report to NCTA, June 1994, with T.Doerfler (co-author)

"Embrace Principle of Universal Access," Multichannel News, November 8, 1993, with D.Curran (co-author)

Valuation of Cable TV System Assets, Report to Mayer, Brown & Platt, December 1989, submitted to United States Tax Court, *Tele-Communications, Inc. and Subsidiaries v. Commissioner of Internal Revenue*, Docket 268-89, with T.Doerfler, S.Low, J.Traenkle (co-authors)

"Cable industry lacks strategy to meet VCR threat headon," Cablevision, April 14, 1986

Prosperity for Cable TV: Outlook 1985-1990, Report to NCTA, May 1985, with D.Schlosser (co-author)

10. Exhibit 1 to this Declaration is a study I supervised to determine the current availability of unused channel capacity in cable television systems. Arthur D. Little, Inc. conducted a survey of cable TV operators concerning their channel availability as of early December 1994. We found that a large proportion of households subscribing to cable TV were served by cable systems that had no excess channels.

11. Our results show that, of the total of 11,628 systems in the industry, approximately 3,250 systems (28 percent) did not have any channels available for additional programming services, while approximately 8380 cable systems did have such capacity. Cable systems lacking excess capacity served approximately 41.5 million cable households, about two-thirds of the industry's sub-

scribers, whereas systems with some available capacity served just over 20 million households.

12. Exhibit 2 to this Declaration, entitled: *Carriage of Must-Carry TV Broadcast Stations* is a study of the consequences of the FCC's must carry rules for cable television systems operators, cable programming services and cable subscribers.

13. We found that, by early December 1994, cable systems serving more than half of U.S. cable households had added TV stations as required to comply with the rules. Our results show that, of the total of 11,628 systems in the industry, approximately 3,560 systems (i.e., roughly 30 percent) had added one or more must-carry TV stations, while approximately 8,070 systems did not add such TV stations. Cable systems adding must carry TV stations served approximately 33 million cable households, more than half of the industry subscribers.

14. Apart from the TV stations that were added to comply with must-carry rules, cable systems carried approximately 74,540 other TV broadcast stations, on average approximately six per system, that had must-carry status or were being carried under retransmission consent agreements. Approximately 46,765 of these TV stations were local, commercial stations. Unlike noncommercial stations, these stations had the option of choosing retransmission consent; and, unlike non-local stations, these stations also were eligible for must carry status. Approximately 62 percent of these local, commercial TV stations opted for retransmission consent and 38 percent for must carry.

Pursuant to 28 U.S.C. ¶ 1746. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 23rd day of May, 1995.

/s/ Peter Shapiro
PETER D. SHAPIRO

[EXHIBIT 1]

ARTHUR D LITTLE

AVAILABILITY OF CHANNELS IN U.S. CABLE SYSTEMS

Report to Counsel for National Cable Television Association (NCTA)

April 1995

Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts
02140-2390

Reference: 47763

Document Reference: PSh02553

* * * *

B. Availability of Unused Cable System Channels

1. Key Results

Of 11,628 cable systems in the population, as counted in the Nielsen CODE database for October 1994, approximately 3,250 systems had no available unused channels, while roughly 8,380 cable systems did have available capacity.

Cable systems that lacked any excess channels served approximately 41.5 million cable households. In percentage terms, as illustrated in Figue II-1, 28 percent of the cable industry's systems, serving 67 percent of cable households, were currently out of capacity to add a new programming service without replacing an existing service.

Figure II-1 Systems and Subscribers With No Excess Channels

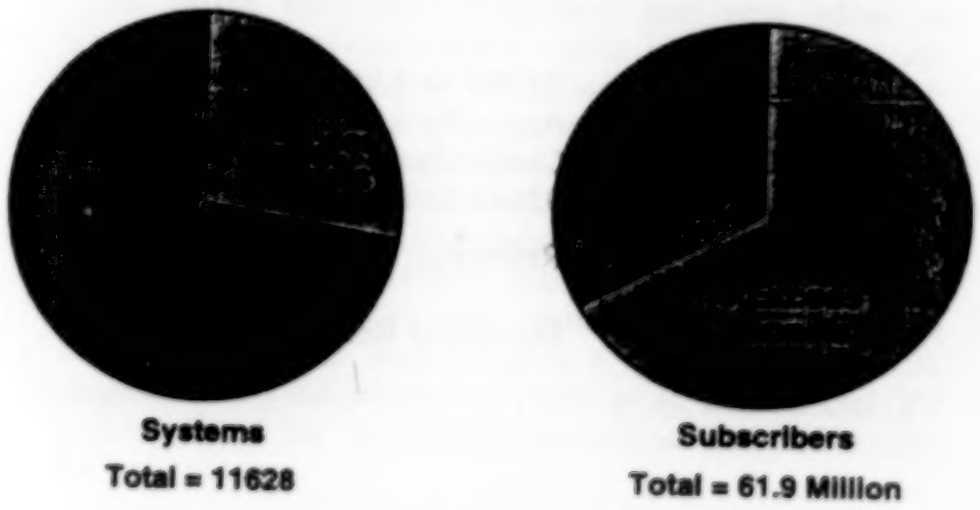


Table II-2 provides the percentage breakdown of systems and of subscribers they served, for each level of channel availability.

Table II-2: Availability of Cable Channels

Channels Available	Percentage of Systems	Percentage of Subscribers
0	28%*	67%**
1	5%	3%
2	4.5%	4%
3-5	11.5%	9%
6-10	16%	9%
11+	35%	9%
Total Numbers:	11,628 systems ***	61,900,000 subscribers

*** 3,250 systems**

**** 41.5 million subscribers**

***** Source: Nielsen CODE database; all other numbers in the Table are ADL estimates**

The 90 percent confidence intervals for systems with zero excess channels and for subscribers served by these systems are as follows:

- For *systems*: 2870 to 3640, or 25 to 31 percent of the population of systems
- For *subscribers*: 37M to 46M, or 60 to 74 percent of the population of subscribers.

That is, there is a 90 percent probability that these intervals include the true number of cable industry systems with no excess channels, and the true number of subscribers they serve [8].

[8] It often is equally important that a sample estimate be neither "too high" nor "too low" in which case a 95% confidence interval is appropriate to acknowledge an overall 5% chance that the true value is outside the stated range, i.e., with a 2.5% chance in either direction. In this study, we do not want to overstate any shortage of cable channel capacity, and so are willing to tolerate a 5% level of uncertainty in one direction only, i.e., a one-in-twenty chance that the true percentages of systems with zero available channels, and of subscribers they serve, are less than the lower bound calculated from our sample.

We found, in any case, that our 95% confidence intervals are only slightly wider than our 90% confidence intervals:

2. Size Versus Channel Availability

Larger systems were more likely than smaller ones to have exhausted their channel capacity. As illustrated by Figure II-2, only 21 percent of the 9640 systems that serve fewer than 5,000 subscribers had zero available channels while much higher proportions of systems in larger size categories had no excess capacity, up to 85 percent of the very largest systems.

Figure II-2 System Size and Availability of Excess Channels

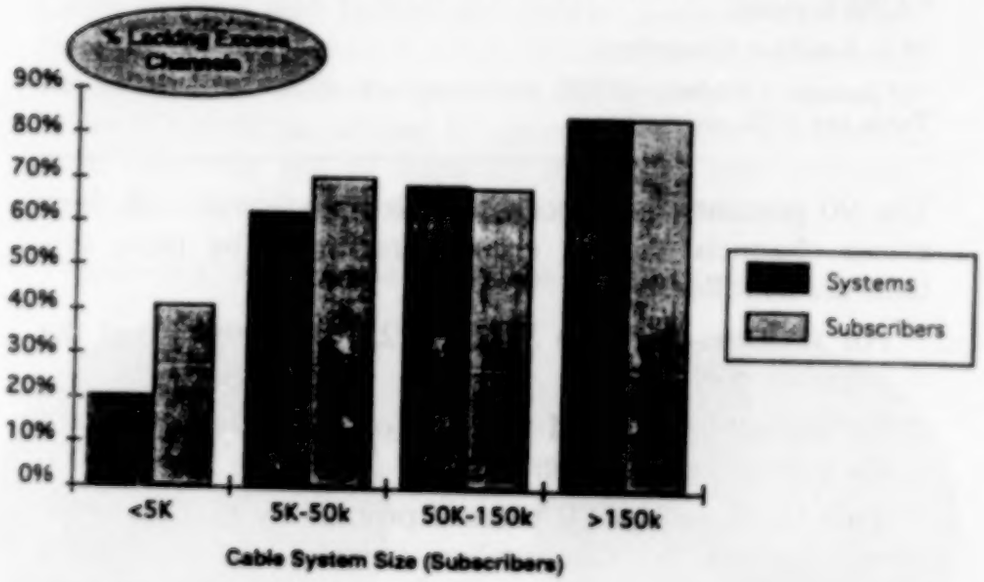


Table II-3 provides the data used for the Figure II-2 chart.

- For systems: 2802 to 3710, or 24% to 32% of the population of systems
- For subscribers: 36M to 47M, or 59% to 75% of the population of subscribers

Table II-3: Size of Cable System versus Channel Availability

Size Category of System (Subs)	Percentage With 0 Channels Available: Systems %	N	POP	Subscribers %	N	POP
<5k	21%	2000	9640	41%	3.7M	9.0M
5-50k	62%	1085	1740	70%	21M	29.9M
50-150k	69%	145	210	68%	11M	16.1M
>150k	85%	28	33	84%	5.8M	6.8M

N = Number of systems or subscribers lacking excess channels (rounded)

POP = Population of systems or subscribers in size category (rounded)

Notably, a much higher proportion of subscribers (41%) than of systems (21%) in the smallest system size category had no channels available. Even within the smallest size category, it must be the case that the relatively larger systems—serving thousands rather than hundreds of subscribers—tend to be the ones lacking available channels.

3. Installed Capacity Versus Available Channels

We compared availability of channel capacity versus the systems' installed capacity. As listed in Table II-4 below, installed capacity appears to make little difference except for systems with the fewest channels, i.e., fewer than 20. Approximately 55 percent of the systems with installed capacity of less than 20 channels have no excess capacity: 22 percent to 28 percent of systems with greater installed channel capacity are in this situation.

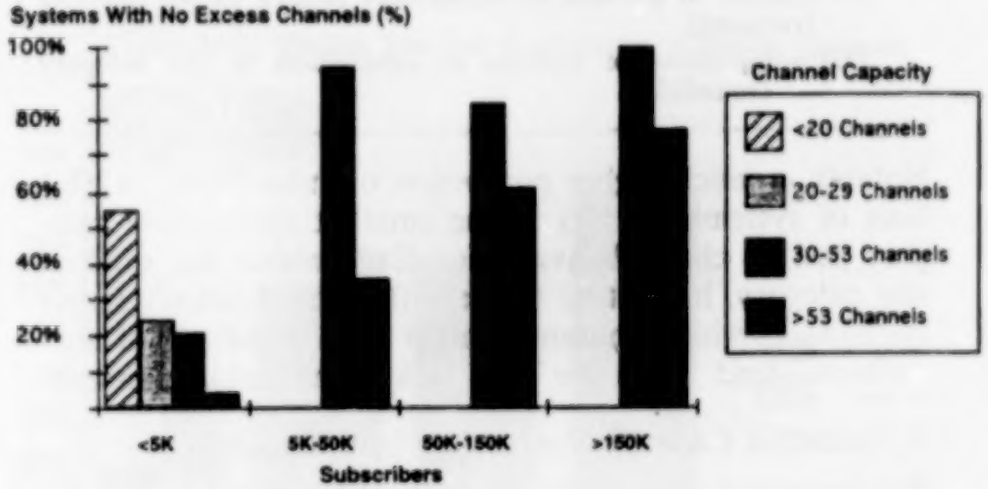
Table II-4: Installed Capacity

Systems	Channels Installed: <20	20-29	30-53	>53
Zero Channels Available (%)	55%	25%	28%	22%
Total Systems	390	1380	7650	2210

Figure II-3 illustrates that system size (in terms of subscribers) is a factor, in showing that:

- Only the smallest systems (with the fewest subscribers) have fewer than 30 channels installed.
- Among systems with installed channel capacity of more than 53 channels, larger systems (with the most subscribers) are more likely to lack excess available channels.

Figure II-3: Effect of Installed Capacity and System Size



Data used for the Figure II-3 chart are provided in Table II-5.

Table II-5. Percentage of Systems Lacking Excess Channels: Installed Capacity and Size

	Channels Installed			
Subscribers	<20	20-29	30-53	>53
<5k	55%	25%	21%	4%
5k-50k	—	—	95%	86%
50k-150k	—	—	84%	61%
>150k	—	—	100%	77%
Total Systems	890	1380	7650	2210

These results provide additional support for the proposition that systems in larger markets are more likely to have no channels available for additional programming, even if they have greater installed channel capacity.

4. Reasons for Non-availability of Cable Channels

As shown in Figure II-4, by far the most common reason that systems had no excess capacity was that all their installed channels were already in use to deliver services. The next most common reason was that one or more unused channels could not be used for technical reasons. Other reasons occurring less frequently were contractual obligations or franchise requirements for which cable operators were reserving currently-unused channels.

Figure II-4. Reasons For Non-Availability of Channels

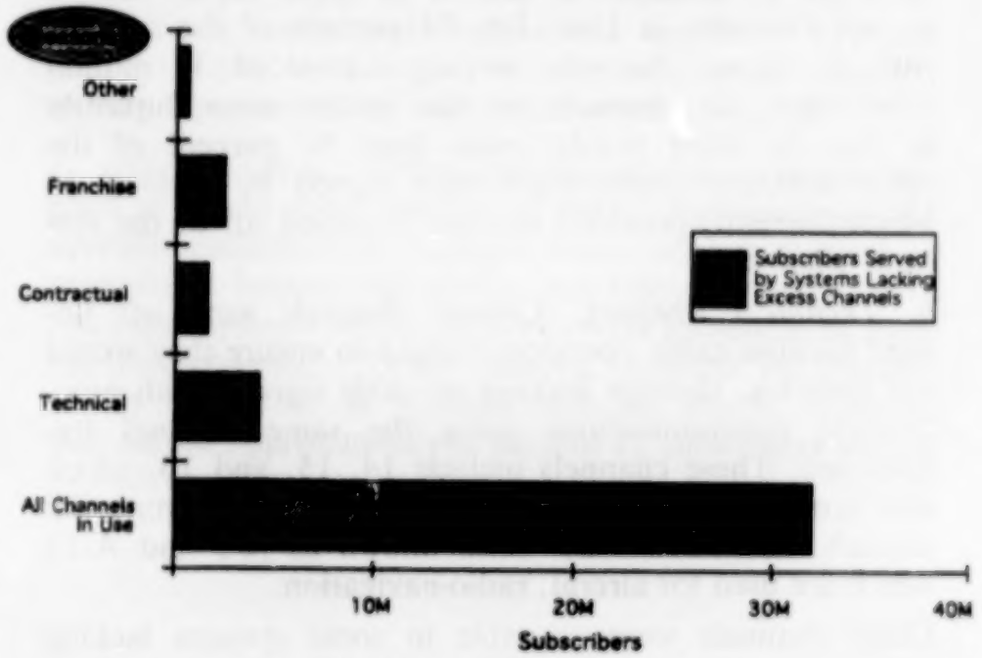


Table II-6 provides counts of systems with no excess channels and of subscribers they served, attributable to specific reasons for channel unavailability.

Table II-6: Reasons for Non-Availability of Cable Channels

	Systems	Subscribers
Total With O Available	3250	41.5 million
Reasons *		
All in use for services	2400	32.1 million
Technical	680	4.4 million
Contractual	90	1.8 million
Franchise	65	2.5 million
Other	35	0.8 million

*** Totals do not match exactly due to several instances in which a single system has multiple unused channels that are defined as unavailable, each for different reasons.**

a. All Capacity in Use. For 74 percent of the systems with no excess channels, serving a total of 32 million subscribers, all channels on the system were currently in use. In other words, more than 50 percent of the cable industry's subscribers were served by systems in which currently-provided services occupied all of the systems' channels.

b. Technical Reasons. Certain channels were left unused because cable operators wished to ensure they would not interfere, through leakage of cable signals, with areonautical communications using the same channel frequencies. These channels include 14, 15, and 16, which also are used for voice communications with commercial aircraft, and 98 and 99 (also known as A-2 and A-1) which are used for aircraft radio-navigation.

Other channels were unusable in some systems lacking cable converters because TV sets could not tune to them (e.g., channel 1) or had filters to block their reception (e.g., FM broadcast channels)[9]. In some cases, the channels at the high end of the cable system's frequency band did not deliver adequate picture quality. Overall, such technical reasons accounted for 21 percent of the systems

[9] EIA Draft Standard, Cable Television Channel Identification Plan, Rev 5/3/94, points out that for these FM channels (often designated as A-3 to A-5):

> . . . Many television receivers currently on the market and compatible units to be produced in the near future contain traps to attenuate the FM band, thereby greatly reducing the source of cross-modulation and intermodulation interference to TV. Inclusion of these traps inhibits the reception of these channels. (para. 2.2)

and 11 percent of the subscribers in the zero-channels-available category.

c. Contractual Reasons. Agreements that are either consummated or imminent between the cable operator and programmer networks for use of specific channels blocked the use of these channels for other purposes. These accounted for 3 percent of the systems and 4 percent of the subscribers.

d. Franchise Reasons. Certain channels were set aside by the cable operator for governmental or other public access, or for lease by others, as required by the franchise. Such contractual explanations applied to approximately 2 percent of systems with no excess capacity, serving 6 percent of the subscribers in this category.

e. Other Reasons. Other non-discretionary reasons applied in a very small number of cases. For example, one operator identified his system's single unused channel as unavailable because the system was being connected with two other systems whose networks were incapable of passing this channel. "Other reasons" applied to approximately 1 percent of systems with no excess channels, that served approximately 2 percent of subscribers served by such systems.

[EXHIBIT 2]

ARTHUR D LITTLE

CARRIAGE OF MUST-CARRY TV BROADCAST STATIONS

Report to Counsel for National Cable Television Association (NCTA)

April 1995

Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts
02140-2390

Reference: 47763

Document Reference: PSh02751

I. Summary of Opinion

Counsel to the National Cable Television Association (NCTA) and other plaintiffs requested Arthur D. Little, Inc., to assess the consequences of the FCC's must-carry rules[1] for cable TV system operators, cable programming services, and cable subscribers. I was Project Director for the Arthur D. Little assignment and will provide the expert testimony concerning our results.

As senior consultant in cable and telecommunications at Arthur D. Little, I have worked extensively for clients in the cable TV and telecommunications industries. Details concerning my credentials are provided in Appendix 1.

A. Assessment

Arthur D. Little, Inc., surveyed cable TV operators concerning effcts of the must-carry rules. We employed a stratified random sample that provided unbiased estimates at a high level of precision. For each system in our survey, we identified TV stations added to comply with the rules; we also identified existing cable services that were dropped or moved to a different cable channel location in order to make room for the stations that were added.

1. TV Stations Added

We found that, by early December 1994, cable systems serving more than half of U.S. cable households had added TV stations as required to comply with the rules.

Our results show that, of the total of 11,628 systems in the industry, approximately 3,560 systems (i.e. roughly 30 percent) had added one or more must-carry TV stations, while approximately 8,070 systems did not add such TV stations.

---

[1] 47 C.F.R. Section 76.56.

Cable systems adding must-carry TV stations served approximately 33 million cable households, more than half of the industry's subscribers.

Approximately 1,880 cable systems made room for added must-carry TV stations by dropping or moving other programming services. These systems served just over 27 million households.

Of the approximately 1,740 cable services that were moved, approximately 1,400 (80 percent) were re-located to higher-number cable TV channels.

2. TV Stations Already Carried

Apart from the TV stations that were added to comply with must-carry rules, cable systems carried approximately 74,540 other TV broadcast stations, on average approximately six per system, that had must-carry status or were being carried under re-transmission consent agreements.

Approximately 46,765 of these TV stations were *local, commercial* stations. Unlike *non-commercial* stations, these stations had the option of choosing re-transmission consent; and, unlike *non-local* stations, these stations also were eligible for must-carry status. Approximately 62 percent of these local, commercial TV stations opted for re-transmission consent and 38 percent for must-carry.

Relocating commercial and non-commercial must-carry TV stations to new cable channels resulted in other cable programming services being moved on systems serving approximately 9 million cable households.

3. Availability of Channel Capacity

About one-third of the cable systems that had added must-carry TV stations prior to early-December 1994 had zero excess channel capacity as of that date. All of their usable

cable channels were occupied. These systems served approximately 23 million subsribers, roughly 37 percent of all cable households.

Approximately 2,945 cable systems (25% of all systems) had no excess channels *and* were carrying must-carry TV stations that had been added or that had invoked must-carry status. These systems served roughly two-thirds of all cable households. On average, the must-carry TV stations occupied approximately four cable channels on these channel-constrained systems.

B. Evaluation

Compliance with the FCC's must-carry rules has had significant consequences for the cable TV industry. Scarce channel capacity has been allocated to add must-carry TV stations in systems serving a high proportion of U.S. cable households. Many of these systems have been required to change their existing programming line-ups to provide space for the must-carry TV stations.

* * * *

B. Effects of Must-carry Rules

1. Key Results

Of 11,628 cable systems in the population, as counted in the Nielsen CODE database for October 1994, approximately 3,560 systems added TV broadcast stations as required to comply with the FCC's must-carry rules.

Systems adding must-carry TV stations served approximately 33 million cable households. In percentage terms, as illustrated in Figure II-1, 30 percent of the cable industry's systems, serving over 50 percent of cable households, added must-carry TV stations.

Figure II-1 Systems and Subscribers With Added Must-carry TV Stations

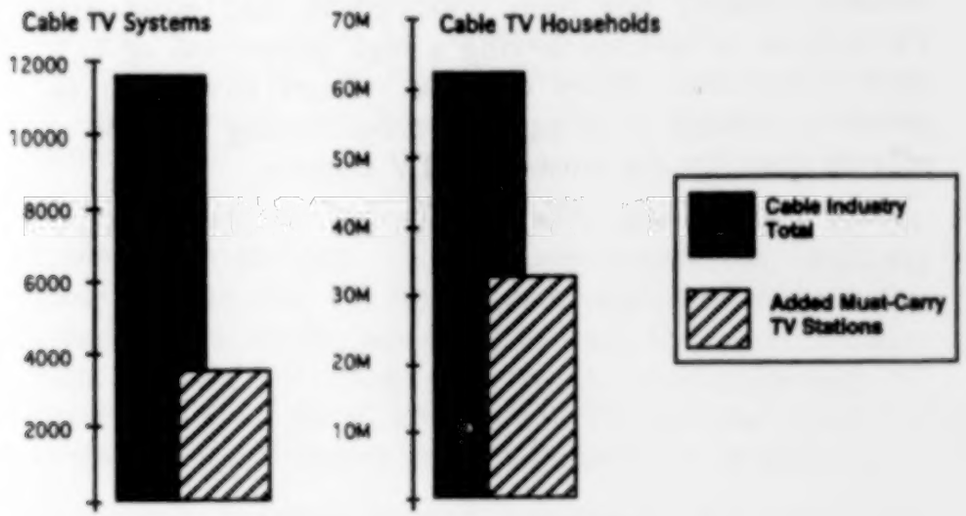


Table II-2 provides the percentage breakdown of systems and of subscribers they served, for systems adding must-carry TV stations.

Table II-2: Addition of Must-Carry TV Stations

TV Stations Added	Percentage of Systems	Percentage of Subscribers
0	69%	47%
1	17%*	27%**
2	8%*	17%**
3+	5%*	9%**
Total Numbers:	11,628 systems***	62,300,000 subscribers

*Total = approximately 30%, or 3560 systems in total

**Total = approximately 53%, or 33 million subscribers

*** Source: Nielsen CODE database; all other numbers in the Table are ADL rounded estimates

A total of approximately 5,880 must-carry TV stations were added by the 3,560 cable systems, equivalent to an average of roughly 1.7 TV stations per system.

The 90 percent confidence intervals for systems adding TV stations to comply with must-carry rules, and for subscribers served by these systems, are as follows:

- For *systems*: 2,670 to 4,445, or 23 to 38 percent of the population of systems
- For *subscribers*: 29M to 37M, or 47 to 59 percent of the population of subscribers.

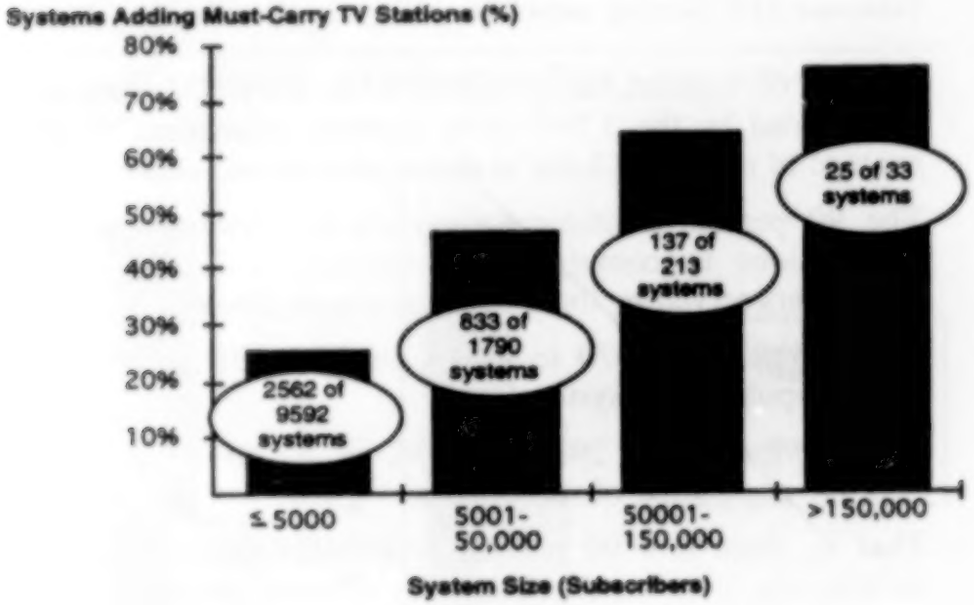
That is, there is a 90 percent probability these intervals include the true number of cable systems adding must-carry TV stations and the true number of subscribers they serve [9].

[9] It often is equally important that a sample estimate be neither "too high" nor "too low" in which case a 95% confidence interval is appropriate to acknowledge an overal 5% chance that the true value is outside the stated range, i.e., with a 2.5% chance in either direction. In this study, we do not want to overstate the effects of the FCC rules, and so are willing to tolerate a 5% level of uncertainty in one direction only, i.e., a one-in-twenty chance that the true percentages of systems adding must-carry TV stations,

2. Cable System Size

Larger systems, in terms of number of subscribers, were more likely than smaller ones to have added must-carry TV stations. As illustrated by Figure II-2, approximately 27 percent of the systems that serve fewer than 5,000 subscribers added such TV stations as compared to progressively higher proportions, up to 75%, of larger systems.

Figure II-2 Systems Adding Must-Carry TV Stations, By System Size (Subscribers)



---

and of subscribers they serve, are less than the lower bound calculated from our sample.

In any case, our 95% confidence intervals are only slightly wider than our 90% confidence intervals:

- For systems: 2500 to 4615, or 21% to 40% of the population of systems
- For subscribers: 28M to 38M, or 45% to 61% of the population of subscribers

3. Channel Availability

About one-third of the cable systems that had added must-carry TV stations prior to mid-December 1994, when we completed our first survey, had zero excess channel capacity as of that date. All of these systems' usable cable channels were occupied. As shown in Table II-3, of the approximately 3,560 systems that had added must-carry stations, roughly 1,120 had zero excess channel capacity; these systems served approximately 23 million subscribers, roughly 37 percent of all cable subscribers and approximately 70 percent of the cable households served by systems with added must-carry stations.

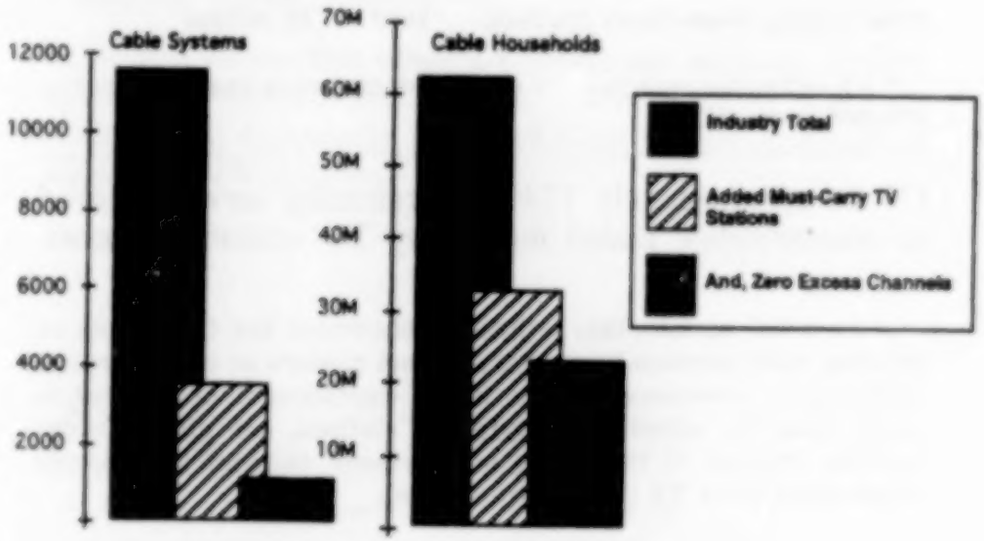
Table II-3: Channel Availability

System Attributes	Systems'	Subscribers Served*
Added Must-Carry Stations	3560	33 million
And, Zero Excess Channels	1120	23 million
Industry Totals	11,628	62.3 million

* Rounded estimates

These proportions are illustrated in Figure II-3.

Figure II-3: Channel Availability in Systems with Added Must-Carry TV Stations



Cable systems that had added must-carry TV stations, and that lacked any excess channel capacity for any additional programming, on average allocated approximately 1.8 cable channels for the added must-carry stations.

4. Effects on Existing Cable Services

Of the approximately 3,560 cable systems that added must-carry TV stations, just over half (approximately 1,880 ssytems) dropped or moved approximately 2,520 programming services that formely had resided on the cable channels now occupied by the newly-carried stations [10] These systems served over 27 million cable households, equivalent to roughly 44 percent of the industry's subscribers.

Table II-4 provides the breakdown of each of these effects.

Table II-4: Effects of Adding Must-Carry TV Stations

	Systems	Subscribers	Services
Dropped	640	12 million	780
Moved	1850	19 million	1740
Total Drops and Moves *	1880	27 million	2520
Total Adding Must-Carry Stations	3560	33 million	

* All estimates rounded. In some systems, more than one service dropped or moved.

Of the approximately 1740 programming services moved to accommodate added must-carry TV stations, approxi-

[10] As noted earlier, this estimate understates the full effects on existing cable services because we did not capture or count services moved as a consequence of the initial displacement of services to make room for added must-carry TV stations, nor did we count services dropped if they were not formerly resident on channels where must-carry TV stations were added.

mately 1,400 (80 percent) were moved to higher cable channel positions [11]

a. Types of Programming Services Affected. Each of the existing programming services was coded as follows:

- *Broadcast TV station*—i.e., any U.S. TV broadcast station
- *Local channels*—e.g., local access, local origination, or leased channels
- *Shopping*—e.g., QVC, HSN, or advertising channels
- *Family*—e.g., Nickelodeon, Disney, Learning, Discovery
- *News/Public Affairs*—e.g., CNN, CSPAN, CNBC, Weather, Court TV
- *Scheduling*—e.g., electronic program guides, barker channels
- *Religious*—e.g., TBN, PTL, EWTN
- *Entertainment*—e.g., Nashville, E!TV, FxNet, USA, pay channels, super-stations
- *Other*—e.g., music channels, non-U.S. broadcast TV stations, sports channels

Table II-5 shows that other TV broadcast stations, family-oriented channels, and general entertainment channels tended most frequently to be affected by the addition of must-carry TV stations.

[11] For example, to Channel 20, from Channel 10

Table II-5: Types of Existing Programming Services Affected

Type of Service	Services * that were: Dropped	Moved	Total
Broadcast TV Station	250	355	605
Local	25	65	90
Shipping	90	135	225
Family	—	340	340
News/Public Affairs	50	110	160
Scheduling	10	75	85
Religious	145	5	150
Entertainment	115	595	710
Other	100	60	160

* All estimates rounded. In some systems, more than one service dropped or moved.

b. Relationship to Availability of Channels. Most of the cable systems that added must-carry TV stations prior to early-December 1994, and had zero available channels as of that date, also had modified their existing programming line-ups in some way to make room for the must-carry TV stations, as shown in Table II-6.

Table II-6: Channel Availability in Systems Modifying Programming Line-Ups

System Attributes	Systems*	Subscribers Served*
Zero Excess Channels	3205	42 million
And, Added Must-Carry Stations	1120	23 million
And, Modified Programming Line-Ups	920	19 million

* Rounded estimates

5. Existing TV Stations Invoking Must-carry Status

Local broadcast TV stations already carried on cable systems could elect for continued carriage either as must-carry stations (if eligible) or through re-transmission consent agreements with the cable operators. Our survey found almost every cable system had one or more TV stations that had invoked must-carry status:

- approximately 10,530 of 11,628 systems;
- serving approximately 61.6 million of the industry's 62.3 million cable subscribers.

Apart from the TV stations that were added to comply with must-carry rules, cable systems carried approximately 74,540 other TV broadcast stations, on average approximately six per system, that had must-carry status or were being carried under re-transmission consent agreements.

Included among these stations were approximately 12,235 local non-commercial TV stations that did not have the option of choosing re-transmission consent.

The remaining 62,305 *commercial* TV stations *could* seek to be carried under re-transmission consent agreements; of these, approximately 44,725 (72%) were carried under such agreements.

To be eligible for must-carry status, a commercial TV station had to be located in the same ADI as the cable system. Excluding non-local commercial stations, cable systems carried approximately 46,765 *local, commercial* TV stations, of which approximately 62 percent opted for re-transmission consent and 38 percent for must-carry.

Commercial and non-commercial must-carry stations occupied, on average, almost three cable channels on each system carrying such stations.

a. Effects of Must-Carry Elections. There were few instances of existing services being dropped as a result of must-carry elections by TV stations already being carried on the systems. However, in some cases the must-carry stations were re-positioned at their request, which resulted in other services being moved. Such moves of existing services occurred as follows:

- in approximately 570 systems,
- serving approximately 9 million subscribers,

- involving approximately 950 programming services,
- of which almost 60 percent were moved to higher cable channel positions.

b. Channel Availability. Approximately 2,945 cable systems (25% of all systems) had no excess channels *and* were carrying must-carry TV stations that had been added or that had invoked must-carry status. These systems served approximately two-thirds of all cable households. On average, the must-carry TV stations, whether added or invoking must-carry status, occupied approximately four cable channels on these channel-constrained systems.

6. Other Information on TV Station Carriage

Appendix 4 provides additional information concerning types of TV broadcast stations carried by cable TV systems, including:

- Stations added to comply with must-carry rules
- Stations invoking must-carry status
- Stations carried under re-transmission consent agreements.

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.A

* * * *

Dated: May 26, 1995

* * * *

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

EXPERT DECLARATION OF HARRY M. SHOOSHAN III

I, Harry M. Shooshan III, depose and say as follows:

1. I am submitting this Declaration in support of the motion for summary judgment made by defendants in the above captioned proceeding.

2. I am a Principal of Strategic Planning Research, Inc., ("SPR") an economics and public policy consulting firm in Bethesda, Maryland. I submit this affidavit on behalf of the United States, the Federal Communications Commission, the National Association of Broadcasters and the Association of Independent Television Stations, Inc.

3. I am an expert on regulatory, economic and policy issues relating to the cable and broadcasting industries. From 1975-1980, I served as Chief Counsel and Staff Director of what is now the Telecommunications Subcommittee of the U.S. House of Representatives. In that capacity, I played a major role in efforts to rewrite the Communications Act of 1934. From 1976 to 1991, I was an Adjunct Professor of Law at Georgetown University Law Center, where I taught communications law and regulation. As set forth in the expert report attached as Attachment A, I have authored numerous studies and articles dealing with regulatory and economic issues facing the cable television, broadcasting and telephone industries. I have testified before Congressional committees and the Federal Communications Commission, and have appeared as an expert witness in legal and regulatory

proceedings. My expert report in this matter is appended as Attachment A.[1]

4. In this affidavit, I will set forth my opinions regarding the impact of the "must carry requirements" in the Cable Television Consumer Protection and Competition Act of 1992 ("the Cable Act") on cable operators and programmers. Those opinions are based on my own knowledge of the cable and broadcasting industries, trade press reports, review of the plaintiffs' allegations in this litigation, and analysis of documents compiled by other experts, and other information as set forth below.

5. To summarize: the must carry requirements have had minimal (and diminishing) impact on both cable operators and cable programmers. Cable operators have devoted only a small fraction of their channel capacity to broadcast stations added as a result of the must carry requirements are unsupported speculation (and are in-*any* broadcast stations as a result of the must carry requirements. Where broadcast stations have been added, few cable networks have actually been dropped. Based on data from both plaintiffs' and defendants' experts, it appears that cable operators have been in a position to continue carrying *more than 99%* of the programming they were carrying before the Act's requirements became effective. And even this minimal impact is diminishing with time (and will dramatically decline in the future) as channel capacty increases.

6. Given the very limited amount of channel capacity used for broadcast stations added pursuant to the must carry requirements, it is not surprising that the impact of the must carry requirements on cable programmers has also been quite limited. In fact, even if one were to accept for the sake of argument that every one of the

---

[1] This expert report was prepared prior to submission of a report by plaintiff's expert Dr. Shapiro. As I explain, Dr. Shapiro's report corroborates the opinions expressed in my expert report.

plaintiff programmers' allegations were true, no programmer has even alleged that it has been dropped or adversely positioned on one percent of the cable systems in the Unitd States. And during this same period, in virtually every case, these programmers have been added on hundreds of cable systems and their net subscribership has increased substantially. For reasons that I will explain, the programmers' contention that they might have been added on significantly more systems absent the must carry requirements are unsupported speculation (and are inconsistent with the representations of many programmers and operators to the FCC that rate regualtion was the primary reason that cable operators failed to add new cable networks during this period).

7. The absence of a material adverse impact on cable programmers is also confirmed by the dramatic increase in cable programmers entering the marketplace since the Cable Act was passed. This growth is based on the near universal recognition that channel capacity is now expanding rapidly and will expand even more rapidly in the near future. Thus, whatever minor impact the must carry requirements may have arguably had, these market entrants (and their investors) recognize that this impact will become largely irrelevant as channel capacities increase.

8. In reaching these conclusions, it should be emphasized that they are dictated by a broad range of available evidence. Indeed, as explained below, they are strongly supported by the principal factual contentions and/or findings of both the plaintiffs and their expert, Dr. Shapiro. Although there are reasons to believe that Dr. Shapiro's data overestimates the impact of must carry requirements (because it relies on information provided by cable operators who were told the information would be used in this litigation and therefore had an incentive to overstate the impact), it is instructive that even if one were to accept his findings, they confirm the limited impact of the must carry requirements on cable operators and programmers.

Cable Operators

9. The evidence that has been developed is quite consistent in demonstrating that the vast majority of cable operator shave added *no* broadcast stations, or only one broadcast station, as a result of the must carry requirements. Specifically:

A. Plaintiffs' expert, Dr. Shapiro, has estimated this number based on a sample of cable systems. Based on this sample, he reports the following in Table II-2 on page 11 of his report "Carriage of Must-Carry TV Broadcast Stations" (hereafter "Shapiro Must Carry Report") (I have appended this report as Attachment B):[2]

Table II-2: Addition of Must-Carry TV Stations

TV Stations Added	Percentage of Systems	Percentage of Subscribers
0	69%	47%
1	17%	27%
2	8%	9%
3+	5%	9%

B. Instead of using a sampling technique, defendants' expert, Mr. Meek, has presented totals based on Cable Data corporation's compilation of the copyright forms filed by each individual cable system semi-annually. Mr. Meek reports that this data base includes both historical and current information on carriage of broadcasting stations and cable programming. Mr. Meek's analysis of this data, reported in Section VII of his expert report at page 29 (the relevant sections of this report are appended as Attachment D), indicates the following:

TV Stations Added	Percent of Cable Systems
0	73%
1	18%
2	6%
3	2%
4+	1%

[2] Dr. Shapiro's other report, "Availability of Channels in U.S. Cable TV Systems," is appended hereto as Attachment C.

10. Thus, the data indicates that a substantial majority of cable systems (if Dr. Shapiro's figures are correct, representing approximately half of all subscribers) have not added *any* broadcast stations as a result of the must carry requirements, and approximately 86-91% of cable systems in the United States have added one or fewer stations as a result of the requirements. Although Dr. Shapiro does not provide a breakdown regarding the number of systems that have added more than three broadcast stations, Mr. Meek's analysis indicates that this only involves approximately one percent of all cable systems.

11. The impact of the must carry requirements on cable operators can also be evaluated by measuring the percentage of available channel capacity that is being used for broadcast stations added to cable systems pursuant to the must carry requirements. The following information is instructive:

A. Based on his analysis of data for all the cable systems in the United States, Mr. Meek finds that "the percentage of activated channel capacity devoted to broadcast stations added to cable systems during the period after must carry requirements became effective through June 30, 1994, amounts to only 1.59% of total activated channel capacity." Meek Expert Report at 29.[3]

B. Although Dr. Shapiro has not attempted to calculate the percentage of activated channels that are being used by broadcast stations added pursuant to the must carry provisions, his findings do permit an estimation of that number. According to Nielsen's CODE data base, the total number of cable channels currently in use in

[3] This percentage is the percentage for *all* broadcast stations added. Because some of those stations were almost certainly added pursuant to the retransmission consent provisions, the percentage of total activated channels used for must carry adds will be something less than this percentage.

the United States is 355,112; the total channel capacity according to that data base is 409,155. *See* Amendment S. Assuming that Dr. Shapiro's estimate that "aproximately 5,800 must-carry TV stations" have been added by cable systems in the United States (Shapiro Must Carry Report at 11) is correct, this would mean that 1.44% of cable channel capacity in the United States is being used for broadcast stations added pursuant to the must carry requirements. The percentage of channels actually in use (as opposed to available capacity) that is being devoted to these broadcast stations is 1.66%. Notably, this number is very consistent with Mr. Meek's estimate of 1.59% as of June 30, 1994.

C. The numbers for the largest MSOs may be somewhat higher than the cable industry average, but are still *de minimis*. In Time Warner's interrogatory responses, Time Warner (the 2nd largest MSO) reports that 9.90% of its channel capacity is being used to carry broadcast stations pursuant to the must carry provisions of the Cable Act. Attachment E (Time Warner's Third Supplemental Response to Defendants' First Joint Set of Interrogatories).

It is clear, however, that most of these stations were not *added* to Time Warner's system as a result of the Act (that is, Time Warner was already carrying most of these stations before the must carry requirements became effective). In other interrogatory responses, Time Warner has identified the broadcast stations that were *added* to its system *after* the must carry requirements became effective for commercial stations on June 2, 1993. This information has been compiled by Jenner & Block from Time Warner's Responses to Defendants' Second Joint Set of Interrogatories and Supplemental responses.[4]

[4] *See* DAE VOL. VII.A, EXH. 53 (exh. a); EXH. 54; EXH. 56; EXH. 57; EXH. 61; EXH. 62. Time Warner also produced documents at the beginning of the deposition of its Rule 30(b)(6)

Time Warner's responses indicate that only 240 out of the 1100 (or 22%) of the broadcast stations that it identifies as "must carry" stations were added to its systems after the must carry requirements became effective. (*See* Attachment F, Table 1). The remaining broadcast stations involve broadcasters that Time Warner, in the exercise of its editorial discretion prior to the imposition of must carry, voluntarily chose to carry on its cable systems.

The amount of Time Warner channel capacity used for stations added pursuant to the must carry requirements can be derived by taking the total number of stations it added (240) and dividing this total by Time Warner's total activated channel capacity (12,410.0).[5] This analysis indicates that 1.93% of Time Warner's activated channel capacity is being used for broadcast stations added pursuant to the must carry requirements.

D. Similar figures have been derived by the law & Economic Consulting Group from data produced in discovery by some of the largest multiple system cable operators ("MSO's). *See* DAE VOL. II, Declaration of John L. eterman. Among the twelve MSO's for which data was reported, the amount of channel capacity used for must carry stations added pursuant to the Act ranged

---

designee that provided information on systems for which Time Warner had not fully responded to defendants' interrogatory requests. Information for these systems was derived from the documents that have been compiled as DOE VOL. VII.O, Exh. 369.

[5] This figure is derived by multiplying the average channel capacity of 43.7 channels per cable system (as reported by Time Warner in the Third Supplemental Response to Defendants' First Joint Set of Interrogatories, Resp. 14) by the total number of Time Warner Systems (284, as reported by Time Warner). Attachment F. This yields a total number of activated channels of 12,410.8 on Time Warner systems. Other responses provided by Time Warner capacity of 47.075 channels. DAE VOL. VII.B, EH. 49 attachment 2. indicate that the average Time Warner system has a channel

from less than 1.5 percent for Comsat corporation to less than 5.5 percent for Continental Cablevision, Inc. The average MSO in this sample used slightly more than three percent of its channel capacity to carry stations added pursuant to the must carry requirements.

E. The data obtained in response to a 1955 survey undertaken by the Federal Communications Commission in connection with this litigation is consistent with these results. Attachment U. According to the analysis performed by LECG of the "clean" survey responses received by the FCC from 495 cable systems, those systems were using 1.99% of their channel capacity for broadcast stations which had been added pursuant to the must carry provision.

12. To summarize this information, the data from Mr. Meek and Dr. Shapiro indicate that approximately 1.59-1.66% of the channels in use (and a smaller percentage of actual channel capacity) in the United States is being used to carry broadcast stations added pursuant to the must carry requirements. The percentages for large MSO's appear to be somewhat higher than the industry average, but even for large MSO's the percentage appears to range between 1.5% and 5.5% of activated channels.

13. These numbers can be put in perspective by considering a hypothetical average cable system with 46 channels. If that system is typical, it will have added one or fewer broadcast stations as a result of the must carry requirements. Its remaining 45 channels are being used for programming that is carried without regard to the must carry requirements.

14. Furthermore, in the vast majority of instances when a cable operator was required to add a broadcast station, this did not result in displacement of *any* programming by the cable system involved. Although Dr.

Shapiro estimates that 5,880 must carry TV stations have been added (Shapiro Must Carry Report at 11), he also estimates that only 780 services nationally have been dropped as a result. (*Id.* at 14, Table II-4). Thus, according to Dr. Shapiro's estimates, 87% of the time a must carry station has been *added*, this has *not* required the cable operator to drop *any* programming from its channel lineup, even on a temporary basis.

15. Viewed from the perspective of all cable systems in the United States, Dr. Shapiro's data indicates that of the "approximately 3,560 cable ssytems that added must-carry TV stations" only 640 had to drop even a single program from their channel line-up. (Shapiro Must Carry Report at 14 & Table II-4). In other words, Dr. Shapiro's study indicates that 10,988 out of 11,628 cable systems [6]—or 94.5% have not had to drop any programming service, and the remaining 5.5% have dropped an average of 1.22 services from their channel lineups.[7]

16. Even with respect to these drops, the Shapiro data does not indicate the duration of this drop. That is, the data does not indicate whether the dropped service was added back to the ssytem a short period later as a result of negotiation or a decision by the system to increase its number of activated channels. This omission may be significant. For example, plaintiff C-SPAN has alleged that as of March 31, 1995 it has been dropped on six cable systems in the United States as a result of must carry requirements (and cut-back on 11 additional systems). DAE VOL. VII.A, EXH. 37, at 1. But C-SPAN also indicates that there are twenty instances in which it was dropped or there were plans to drop it (and 24 instances involving cut-backs), but the situation

[6] Table II-2 of the Shapiro Must Carry Report indicates that the total universe of cable systems is 11,628 systems.

[7] Table II-4 at page 14 of the Shapiro Must Carry Report estimates that 460 systems dropped a total of 780 services.

had been resolved by March 31, 1995, subsequent to adoption of the revised "going forward" rules by the FCC. *Id.* at 6. This raises the possibility that a significant majority of "dropped" cable networks are later returned to the cable system's programming lineup. However, in estimating the number of dropped services, Dr. Shapiro's report does not indicate whether the drops involved a loss of carriage for days, weeks, months, or some longer period.

17. It is also particularly noteworthy that the largest component (250 out of 780) of Dr. Shapiro's drop estimates involves dropped broadcast stations, not cable programmers. His estimates suggest that in the unusual instances where any programming change was made, a broadcast signal (most likely a distant signal which would have no must carry rights) was the service dropped almost one-third of the time. *See* Shapiro Must Carry Report at 15, Table II-5.

18. Although Dr. Shapiro has also provided estimates regarding channel repositioning, his data fail to *establish* any harm. Dr. Shapiro's estimates indicate that almost 90% of cable systems in the United States (all but 1,350) did not reposition a single program as a result of the must carry requirements. Shapiro Must Carry Report at 14, Table II-4. The remaining 1,350 systems repositioned an average of 1.29 services. Dr. Shapiro's analysis does not tell us whether these relatively few repositionings involved slight movements (e.g., from Channel 20 to 21) or more significant movements (e.g., from Channel 8 to Channel 56).

19. The minimal impact of such activity on cable programmers is discussed below. For present purposes, the key point is that even for the minority of cable systems that had to add any must carry stations, the impact on their programming lineup has been *de minimis*. In most cases, the operator has continued to carry every

program that was in its lineup before the must carry requirements went into effect; only 5.5% of systems have had to drop a single program from their lineups, and only 12% have had to move a single programming service to a different channel position.

20. This very limited impact is also indicated by Time Warner's allegations in this case. As explained *supra*, Time Warner's interrogatory responses indicate that its cable systems had 12,410.8 activated channels in 1934 (the number today would be higher). Time Warner's March 13 disclosures and supplemental disclosures allege that its cable systems have had to drop (or reduce the hours of) a total of 82 programming services.[8] Thus, *even assuming for the sake of argument that all of Time Warner's allegations are true, this means that Time Warner was able to continue carrying more than 99.3% of the programming it was carrying before the must carry requirements became effective.*

21. Based on Dr. Shapiro's data, similar estimates can be made for the cable industry as a whole. As explained above, the Nielsen CODE database indicates that the total universe of cable channel capacity is 409,155, and 355,112 channels are currently in use. Dr. Shapiro estimates that 780 programming services have been dropped as a result of the must carry requirements (of which 250 were broadcasters). This is only 0.2% of the total programming choices carried on cable systems in the United States (i.e., the total universe of 355,112 channels in use). Stated conversely, *cable operators nationwide are continuing to carry (or have been in a position to carry) approximately 99.8% of the programming they were carrying before broadcast stations were added pursuant to the must carry requirements.*

[8] This information was compiled by Jenner & Block from Time Warner's March 13, 1995 Disclosures and the supplements to those disclosures. DAE VOL. VII.B, EXH. 60 (exh. a); EXH. 61 (supplement to exh. a); EXH. 62 (supp. to exh. a). *See also* EXH. 54 (letter from Time Warner correcting previous interrogatory responses); EXH. 57 (same); EXH. 58 (same). A list of Time Warner's alleged drops (or reductions in hours) is appended as Attachment G, Table 2.

22. Although these numbers would be changed somewhat if subscriber percentages, rather than the number of cable systems were used, the fundamentl picture would remain the same. Dr. Shapiro's numbers indicate that:

* 47% of subscribers are in cable systems that have not added *any* must carry stations;
* Of the 33 million subscribers in systems that have added must carry stations, 21 million are in systems that did not drop a single programming service.

(Shapiro Must Carry Report at 11, Table II-2, and 14, Table II-4). Furthermore, to the extent that must carry obligations tend to fall disproportionately on systems with larger subscriber populations, those systems will ordinarily have substantially larger channel capacities. As a result, the operators of those systems have a greater number of channels for which they control programming choices unrelated to the must carry requirements. Indeed, the fact that Time Warner—which is the second largest MSO in the country and has many clusters of cable systems with large subscriberships—has continued to carry more than 99.3% of the programming it was carrying before the must carry requirements became effective, further suggests that even for operators serving large subscriber populations, the impact of the must carry requirements has been *de minimis*.

* * * *

28. Indeed, it is widely recognized that there will be enormous expansions in cable channel capacity throughout the next five-ten years. This expansion will even further reduce the impact on cable operators of complying

with the must carry rules. Thus, even the very limited impact on cable operators alleged by the plaintiffs, will diminish to virtually zero as time passes and channel capacity continues to increase.

29. A look at the growth in channel capacity since the passage of the Cable Act and the rate at which channel capacity is currently increasing further demonstrates the trend to increase channel capacity and the minimal burden caused by must carry. According to Paul Kagan & Associates, the average channel capacity of cable systems in the United States in 1992 was 38.3.[10] Attachment T. This number increased to 43.0 in 1994, and was projected to increase to 50.0 by 1995. *Id.* Using these projections, one can calculate that the average channel capacity, as of June 1, 1995, would be approximately 45.9 channels. Thus, since the end of 1992, the average cable system has increased its capacity by 7.6 channels. Using Dr. Shapiro's number of 11,628 cable systems nationwide, this means that the universe of cable channels has increased by 88,373 channels. According to Dr. Shapiro, must carry stations added after the passage of the Cable Act are using only 5,880 channels, or approximately 6.7% of the total amount of channel capacity that has been *added* since the Act. Indeed, using Kagan's projections, one can calculate that the universe of cable channels has increased since the Act at a rate of 3,047.3 channels per month (and this rate is accelerating). Thus,

---

[10] In other portions of this affidavit, I have used figures maintained by the A.C. Nielsen company concerning *current* channel capacity. These figures are more conservative than the figures calculated by Paul Kagan and Assocs. The Nielsen Company does not, howeevr, maintain historical information on channel capacity, and therefore, I have used Kagan's numbers for the trend analysis. *See* DAE VOL. VII.F, EXH. 134 (comparing Nielsen and Kagan and suggesting that Kagan estimates may be more accurate. It must be noted that the Travel Channel in its responses to interrogatories, has cited estimates from Kagan that suggest that channel capacity has increased at any even faster rate. DAE VOL. VII.A, EXH. 24, at 18.

the expansion of channel capacity is progressing at such a rate that the cable industry adds enough channels in less than two months to carry all of the broadcast stations added under the must carry requirements since the passage of the Cable Act.

Cable Programmers

30. As one would expect from the preceding discussion regarding the very limited impact of must carry requirements on cable operators and systems, the must carry requirements have had a correspondingly minor (and diminishing) impact on cable programming networks. In evaluating the impact of the must carry provisions on cable programming networks, it is important to recognize that most cable networks are "national" program services which generate revenue from license fees paid by cable oprators and/or from th sale of advertising. In the acquisition of programming, the sale of advertising, and other relevant respects these networks operate in national markets. The relevant measures of the financial halth of these cable ntworks and of the cable programming industry as a whole are national measures.

31. Judged by any relevant indicia, the marketplace for cable programming networks is very healthy and is almost certain to improve as channel capacity rapidly expands. This assessment of the programming marketplace is obviously shared by the many new cable programming services that have decided to enter the marketplace since the must carry requirements came into effect.

32. Although Dr. Shapiro's analysis does not focus on the impact of must carry requirements on individual cable programmers, the estimates he derives are relevant to this assessment. As explained above, Dr. Shapiro's data suggest that approximately 1.44% of cable channel capacity is being devoted to broadcast stations that were added pursuant to the must carry requirements. Cable operators are carrying virtually every programming service that they

were carrying when the Cable Act became effective. And in the rare instances in which programming was displaced, as noted previously, it has often been a broadcast station instead of cable programming.

33. Viewed from the perspective of almost any individual programming network, the impact of these actions on its ability to compete in a national marketplace has been *de minimis*. To evaluate the maximum possible impact, one can again begin by assuming, for the sake of argument, that the plaintiff programmers' allegations are well-founded. It is safe to say that this assumption establishes a *ceiling* on the conceivable impact of the must carry requirements.

34. Attachment H (Table 3) is a compilation of information provided in plaintiffs' interrogatory responses and April 14 Disclosures.[11] This table summarizes the total number of instances in which that programmer *alleges* that it has been dropped or repositioned because of the must carry requirements, and the net increase or decrease in th number of cable systems carrying that programmer since the must carry requirements were passed.[12]

35. As Table 3 indicates, even if the plaintiff programmers' allegations were correct, each of the plaintiffs has only been dropped on a very small fraction of the universe of 11,628 cable systems in the United States.[13]

[11] Tables 3 and 4 have been compiled by Jenner & Block from plaintiffs' cited interrogatory responses and April 14 disclosures. The basis for these compilations is set forth on the charts.

[12] The total number of systems carrying a cable programming service (and the increase) are taken from plaintiffs' interrogatory responses and some of those figures apparently include private cable systems ("SMATVs"). In those instances, these figures will not be a precise estimate of the number of non-private cable systems.

[13] This estimate is used in Dr. Shapiro's analysis and is based on the Nielsen CODE database. (Shapiro Must Carry Report at 11).

In fact, the drops alleged by each of these programmers involve less than *1%* of the universe of cable systems. And the number of cable systems that have *added* these programmers since the Cable Act was passed vastly exceeds the number of drops, in most cases by a ratio of twenty-to-one or more.

36. Similarly, Table 3 indicates that even if plaintiffs' allegations are accepted, the number of instances in which a cable programmer has been repositioned involve a minimal percentage of the universe of cable systems—again, less than 1% of the universe of systems. While cable networks argue that they have been harmed by repositioning, the relatively small number of moves reported does not appear to have had any significant adverse impact on the networks' overall performance. Although this information is not included in plaintiffs' April 14 Disclosures, in some cases, the channel movement has actually involved a better (lower-numbered) channel positions. For example, in a survey of 68 cable systems, TBS determined that one-third of the moves involving Turner services were to *better* (i.e., lower) positions. DAE VOL. VII.F, EXH. 130, at TB0002684. Dr. Shapiro acknowledges that approximately 20% of the repositionings revealed in his survey were to a lower channel (*i.e.*, a channel with greater perceived value). Shapiro Must Carry Report at 14. In any case, the number of movies reported is so low that there is no reason to believe this has hadanymaterial impact on the networks involved.

37. The plaintiff programmers also allege that they have been unable to gain carriage on various cable systems because available channels are being used to carry broadcast stations added pursuant to the must carry requirements. The claim that this has significantly impacted their ability to gain cable carriage is immediately called into question by the fact that these broadcast stations are using less than 2% of the available channel capacity in cable systems, and that, as analysis of the Kagan data on

the growth of channel capacity indicates, the increase of cable channels available nationwide has grown substantially since the 1992 Act. This strongly suggests that whatever constraints the programmers claim to have experienced canont be explained by the must carry requirements.

38. The programmers' allegations that they have been unable to obtain carriage are compiled in Table 4 (Attachment I). This compilation indicates that, again, each of the programmer plaintiff's allegations involve less than 1% of the cable systems in the United States (for most of these programmers, the allegations involve 0.1% or less of the universe of cable systems).

39. These claims of injury are not only very limited in the context of a national marketplace, they are, at best, highly speculative. As plaintiffs' discovery responses make clear, their allegations are based primarily on what they have been told by cable operators. In these discovery responses, it is clear that plaintiffs have no independent basis for determining whether a particular cable operator had available capacity or whether he may have added other new networks at a time when he was dropping or denying carriage to one of them. The cable operator has incentives to blame such a decision on lack of channel capacity or government regulation, instead of the operator's own economic interests or the operator's disinterest in the cable programming service involved. A survey and interviews of various cable operators led *Cablevision* to report the following:

> "Often, the channel capacity excuse seems to be shorthand for telling the programmer to get lost," says Barbara Bellafiore Sanden, executive VP of sales and marketing for the fledgling Monitor Channel. "But if you don't get lost and make your case to the operator, his real message is that he wants to be cautious and deliberate. One operator I recently talked with began with zero open channels. By the time he became convinced of the quality of our product, he had found two channels where we could get at least partial carriage."

"To Fill or Not to Fill," *Cablevision,* Feb. 11, 1991 at 27 (CR VOL. I.Q, EXH. 81, CR 11454).

40. The incentive to blame programming decisions on government regulation is magnified by the passage of the Cable Act and the pendency of this litigation in which the burdens, and constitutionality, of the must carry requirements will be adjudicated. For example, a recent article in one of the leading cable industry publications reported that "some industry observers believe that many MSOs have used the retransmission rules and channl limitations as an excuse to replace a nonprofit channel with a money-making network. Others see politics at work. 'I think some people were frustrated by what happened to the [reregulation] of the] industry in Washington, and they've taken out their frustration on [C-SPAN's CEO] and C-SPAN,' said one top MSO executive, who did not want to be quoted." *Multichannel News,* May 8, 1995, p. 22.[14]

41. The propensity and incentive of cable operators to assert "channel capacity" limitations as a convenient excuse for their programming choices is obvious and well recognized, and it is reflected in the cable programmers' and operators' own documents. *E.g.,* DAE VOL. VII.G, EXH. 165 ("No channel space they say—if must carry is done away with they would drop a local home shopping network. They told me back in the summer that they were channel locked but in the fall they had room to put on ESPN2 because of retransmission consent negotiaitons"); DAE VOL. VII.G, EXH. 156 ("We propose that effective immediately this corporation conduct an

[14] C-SPAN and C-SPAN 2 carry coverage of the U.S. House and Senate, respectively.

exhaustive technical audit to determine, what is our channel capacity? It was fascinating to our group that forced with the potential of dropping an established network to add FX, many systems magically found channel capacity."); id. ("We also propose that this company adopt an immediate policy of zero available channels, which means, 'If you've got a channel, it's filled with [pay-per-view].' ").

42. Indeed, many cable programmers and operators have told the Federal Communications Commission that cable programmers were unable to gain carriage in the period after the Cable Act was passed as a result of the Commission's initial rate regulation order which gave cable operators virtually no incentive to add new services or expand channel capacity. These comments suggest that the initial rate regulation rules had an especially adverse impact on low-cost and no-cost services, since the rules gave operators the incentive to carry higher-priced services to take advantage of the "rate base effct." Furthrmore, uncertainty about the rate regulation rules apparently caused cable operators to delay making decisions about new networks. Moreover, the rate regulation rules gave cable operators incentives to retier which may account for some of the repositioning that has occurred in the period since the Cable Act was passed. In some instances, the price schedules proposed by some cable networks (which, in effect, penalized cable operators for putting their service on other than the basic tiers) were at odds with the incentives created by FCC rules for cable operators to retier or expand "a la carte" offerings and thus may have caused operators to decline to carry these networks.

* * * *

48. It is also quite revealing that as soon as the FCC changed the financial incentives for adding new cable programming in its new "going forward" rules (in November 1994), cable programming networks were added to cable systems across the country in significant numbers

(increasing their carriage by millions of subscribers). It is also revealing that much of this rise in carriage has occurred during the same period in which Dr. Shapiro reports that cable capacity was very constrained. Table 5 (Attachment J) sets forth subscribership gains for certain networks based on data from Nielsen Media Research. Six cable programming networks increased their subscribership by between approximately 6 million and 8 million between May 1994 and May 1995.[16] An additional 17 cable programming networks increased subscribership by 3-4 million subscribers, and 6 other programming networks increased subscribership by more than 2 million subscribers.

49. These developments are described in a recent report by the FCC's Cable Services Bureau. (Attatchment K). The Bureau reported that:

> In the few months since the release of the *Going Forward rules*, programmers and operators have been signing deals that will bring cable networks to millions of viewers who have not previously been able to receive them. The Disney Channel gained 4.9 million subscribers by moving from premium service to CPSTs (*Communications Daily*, January 16, 1995). Bravo, a film and arts network, has also moved from the premium services category to the expanded basic tier. As a result, the channel's distribution has increased by at least 2 million and is now available in 20 million homes (*Electronic Media*, January 16, 1995).
>
> The January 16, 1995 issue of *Broadcasting & Cable reported that* "[cable] networks say system

[16] Some of this subscribership increase may be attributable to carriage on DBS services and other multichannel media. As a practical matter, this distinction is of limited relevance to the cable programming networks, which are interested in gaining access to television households regardless of the manner in which multichannel programming is delivered to these homes.

> operators are literally 'going forward' with the FCC's new rules on program packaging. Small and midsize cable networks already are boasting expanded distribution as a result of the FCC's two-month-old going forward rules."

Cable Services Bureau, *Report on Impact of Going Forward Rules* at 2 (Mar. 23, 1995). *See* DAE VOL. VII.H, EXH. 183-190; DAE VOL. VII.E, EXH. 102.

50. These developments provide further corroboration that when cable operators believe it is in their financial interest to add cable programming services, they will find a way to do so. They also support the conclusion—urged by the cable industry itself in seeking modification of the FCC's rate regulations—that to the extent growth of cable programming services has been slowed at all, it is attributable to the lack of financial incentives to add cable programming and not the limited amount of channel capacity occupied by broadcast stations added pursuant to the must carry requirements.

51. Given these facts, there is no justification for concluding—particularly on the basis of uncorroborated claims by cable operators—that the growth of national program services has been materially constrained by the must carry requirements. There are, however, a number of conclusions that can be drawn from the available information:

52. *First*, the amount of channel capacity that is actually being used for stations added pursuant to the must carry requirements is a tiny fraction of the cable industry's available capacity. On that point, the findings of Dr. Shapiro, the findings of Mr. Meek, and my review of other evidence cited above, are all in agreement.

53. *Second*, the 24 programming services represented by the plaintiffs in this litigation (whom one might assume, by virtue of their participation in this litigation,

have been impacted by must carry requirements as much or more than most programmers), have experienced substantial growth since must carry requirements were enacted. This is reflected in the subscribership figures provided in each plaintiff's interrogatory responses, which are set forth in Table 6 (Attachment L). Moreover, because significant subscribership increases resulting from the going forward rules are continuing, these numbers (which reflect subscribership in March) understate the growth of subscribership to date. To suggest that the growth of any of the individual cable programmers would have been faster without the must carry requirements would be pure speculation.

54. *Third*, by any relevant indicia, cable programmers have continued to perform well since must carry requirements were adopted. This is reflected in the cable programming industry's license fee revenues, advertising revenues, average advertising revenues and viewing shares. Tables 7-10 (Attachments M-).[16] As noted above, during this same period, the plaintiff cable networks have also been growing, as reflected in the number of systems on which they are carried, their subscribership, and their advertising revenues. *See* Tables 11, 6 & 12 (Attachments Q, L and R). These indicia of industry growth are particularly significant in light of the cable industry's claim that rate regulation has substantially limited growth of programming networks that would otherwise have occured during this time period.

55. *Fourth*, the substantial increase in the number of programming services entering the marketplace since must carry requirements were enacted (and, in particular, in

---

[16] *See* DAE VOL. VII.F, EXH. 113 (discussing cable ratings); EXH. 114 (discussing cable penetration rate); DAE VOL. VII.H, EXH. 191 (discussing cable ratings); EXH. 192 (programmer subscriber gains); DAE VOL. VII.F, EXH. 121 (HBO subscriber gains). Similarly, see DAE VOL. VII.H, EXH. 181 (discussing 3.9% growth in basic subscribership for top 100 cable operators).

the past year) is a further indication of industry health. It is obvious that the business enterprises and investors that are most closely evaluating this marketplace have determined that the marketplace is healthy and justifies the investment and substantial effort involved to launch a programming network. The Cable Services Bureau's recent report comments on "the large increase in the number of national cable networks being launched. Thus far this year, 133 new national cable networks have announced plans to begin service in 1995, which will more than double the existing 113 national cable networks currently in service. By comparison, only 46 channels were launched during the period from January 1, 1990 to September 1, 1993, immediately prior to regulation. (The 113 cable networks currently in service compares with 80 networks in service in 1992)." Cable Services Bureau, *Report on Impact of Going Forward Rules* at 3 (March 23, 1995) (Attachment K). It is quite evident that potential programmers and investors do not view this market-place as significantly constrained, and in fact have reached quite the opposite conclusion.[17]

56. *Fifth,* it cannot seriously be disputed that even the limited impact that must carry requirements have had in the short term, will diminish over time. As unbiased surveys have indicated, cable channel capacity will increase substantially in the near future. Cable operators will be inclined to make increasing numbers of channels available as demand increases and as new technology lowers the incremental cost of adding capacity. Emerging competition from cable systems and telephone companies will also spur cable companies to increase the number of available channels. With regulation restricting their ability to increase revenues from subscribers, cable operators will also have a greater incentive to

[17] *See* DAE VOL. VII.E, EXH. 103; DAE VOL. VII.H, EXH. 180 (discussing new programming services entering market).

make available more cable programming networks in order to expand the sale of local advertising and to cross-promote pay-per-view services (PPV) (which are not subject to regulation) using the local availabilities on cable networks. Adding new cable programming will provide more local availabilities for sale to local advertisers and for use to cross-promote a cable operator's PPV. Cross-promotion is viewed as an especially effective way to stimulate PPV usage. *See* DAE VOL. VII.G, EXH. 156, at TCI-R- 0013041; DAE VOL. VII.O, EXH. 370, at TWS00042103. It is widely agreed that channel capacity will expand dramatically in fuutre years and, to a significant extent, this phenomenon is already occurring.

57. For the foregoing reasons, it is quite clear that the impact of the must carry requirements on cable operators and programmers is both extremely limited and rapidly diminishing. This conclusion can be drawn from the information provided by plaintiffs and their expert, as well as the additional evidence that I have described.

* * * *

Dated: May 23, 1995

/s/ Harry M. Shooshan, III
HARRY M. SHOOSHAN III

[Exhibit A]

STRATEGIC
POLICY
RESEARCH

7500 Old Georgetown Road Suite 810
Bethesda, Maryland 20814
(301) 718-0111 (301) 215-4033 FAX

Expert's Report of
Harry M. Shooshan III

April 21, 1995

1. Mr. Shooshan is a Principal of Strategic Policy Research, Inc (SPR), an economics and public policy consulting firm located in Bethesda, Maryland. He provides consulting services to a variety of clients in the mass media and telecommunications industries. Before co-founding SPR in 1992, Mr. Shooshan was a Vice President of National Economic Research Associates, Inc (NERA) and, prior to that, co-founded the consulting firm of Shooshan & Jackson Inc. which merged its practice with that of NERA. Before beginning his consulting practice, Mr. Shooshan served for eleven years on Capitol Hill. From 1975-1980, he was Chief Counsel and Staff Director of what is now the Telecommunications Subcommittee of the U.S. House of Representatives. In this capacity, Mr. Shooshan was involved in developing legislation, conducting oversight of public policy and regulation, and communications industries. He played a major role in leading investigations affecting the mass media and tele- efforts to rewrite the Communications Act of 1934. From 1976 to 1991, Mr. Shooshan was Adjunct Professor of Law at Georgetown University Law Center where he taught communications law and regulation. Mr. Shooshan is the author of numerous studies and articles dealing with issues facing the cable television, broadcasting and tele-

phone industries, and has spoken frequently to academic and business groups. He has testified before Congressional committees and before the Federal Communications Commission. He has appeared as an expert witness in legal and and regulatory proceedings. Mr. Shooshan's curriculum vita, including publications and prior testimony, is Exhibit A.

2. SPR is being compensated for the preparation of Mr. Shooshan's testimony. The billing rates of SPR are shown in Exhibit B.

3. Mr. Shooshan will testify that the adverse effects of the current must-carry rules on cable networks and cable operators have been minimal up to now and that any harm created by the rules will be negligible in the future. In reaching these conclusions, Mr. Shooshan has relied upon his general knowledge of communications industries and has reviewed various trade press reports and numerous documents (primarily by cable programmers and operators) during discovery in this litigation; market analyses and surveys, including the FCC's recent analysis of market conditions in the cable industry, the 10th Annual Myers Reports, the Beta survey that was conducted in December 1994 concerning channel capacity and other matters, the 1994 report by Horowitz Associates entitled *State of Cable, 1994*, T. Hazlett *Regulating Cable Television Rates: An Economic Analysis;* various interrogatory responses as well as the plaintiff's statements concerning their harm allegations on March 13, 1995 and April 14, 1995; and compilations of various factual allegations. He is also familiar with Mr. Meek's analysis data from Cable Data Corporation relating to additions of broadcast stations since passage of the Cable Act.

4. Mr. Shooshan will testify that most cable networks are "national" program services which generate revenue from license fees paid by cable operators and from the sale of advertising. In both the acquisition of program-

ming and the sale of advertising, these networks operate in national markets. The relevant measures of the financial health of these cable networks and of the cable progremming industry as a whole are national measures. Specifically, one can look at the number of cable networks that are seeking carriage, especially the number of "new" cable networks that have emerged since the implementation of the must-carry rules. For example, the FCC recently reported that 133 new national cable networks have announced plans to begin service in 1995. [Report of FCC's Cable Services Bureau (March 23, 1995 at page 3.] If channel capacity were, or in the future were likely to be, constrained *on a national basis,* one would see relatively few new cable networks emerging. However, we observe precisely the opposite. The number of cable networks has continued to grow since must-carry. The FCC reported that there are 113 cable networks "currently in service" compared to 80 in 1992. [Report of FCC's Cable Services Bureau (March 23, 1995) at page 3.] One might also look at the number of subscribers, licensee fee revenue, advertising revenues, average advertising revenues and viewing share to determine whether the must-carry rules have adversely affected the growth of cable networks. By all of these reasures, the cable programming industry has done well during the period since the must-carry rules were adopted. *See* Tables 1-5. Moreover, during this same period, each of the plaintiff cable networks has been growing. Since October 1992, they have gained access to more cable systems, have gained access to more subscribers and have gained more advertising revenues. *See* Table 6-8. (Of the cable networks listed in Table 7, all but Lifetime show continuous growth during this period. Limetime's access to subscribers has increased during the period overall, but appears to have declined from September 1994 to March 1995).

5. Mr. Shooshan will testify that the instances in which a cable network *claims* to have been "injured" have

been relatively few. The number of cable systems cited by the cable network plaints where "injuries" have been alleged is extremely small compared to the 11,351 total cable systems in the country. For example, Black Entertainment Television (BET) has alleged incidents of harm involving 120 cable system or 1.05 percent of the total cable systems in the country. In almost all cases, the allegations of injury appear to involve approximately 1 percent (often considerably less) of the cable systems in the marketplace. Even on those systems, only a small percentage of the alleged injuries involve a discontinuation or reduction in carriage, or materially adverse channel repositioning. There is considerable reason to doubt whether the remaining injury claims (generally described as an available channel being taken off the market without reference to whether excess capacity was actually available) should be given any weight at all. Mr. Shooshan will opine that, even assuming all the allegations made by plaintiff, cable networks were true, alleged harm to plaintiffs' ability to compete in a national marketplace is minimal. Moreover, each of the cable networks had more subscribers in March 1995 than when the 1992 Cable Act was enacted. *See* Table 7. While cable networks also argue that they were harmed by repositioning, the relatively small number of moves reported do not appear have had a significant adverse impact on the networks' overall performance. The moves reported involve only a very small number of the total cable systems carrying each service. Furthermore, some cable networks may have actually been moved to better (*i.e.,* lower-numbered) positions during the period. For example, in a survey of 68 cable systems, TBS determined that one-third of the moves involving Turner services were to *better* (*i.e.,* lower) position. [*See* TB0002684.]

6. Mr. Shooshan will testify that the scarcity of cable channels, to the extent that it exists in a particular market, is likely to be the result of the local cable operator's

monopoly status. In any particular market, the economically optimal available capacity is a function of cost conditions, anticipated demand and market structure (*viz.*, competitive/monopolistic). Given the monopoly market structure that has existed up to now, cable operators have had the incentive to restrict output and to deploy sufficient capacity to minimize the costs of producing the restricted output. The imposition of must-carry simply adds another factor to the cable operator's decision calculus, probably one that is relatively insignificant as compared to more fundamental conditions of supply and demand.

7. Mr. Shooshan will testify that, in the future, cable operators will be inclined to make available new channels as demand increases and as new technology lowers the incremental cost of adding capacity. Emerging competition from satellite systems and telephone companies will also spur cable companies to increase the number of available chanknels. With regulations restricting their ability to increase revenue from subscribers, cable operators will also have a greater incentive to make available more channels in order to expand the sale of local advertising and to cross-promote pay-per-view (PPV) (which are not subject to regulation) using the local availabilities on cable networks. Adding new cable members will provide more local availabilities for sale to local advertisers and for use to cross-promote a cable operator's PPV. Cross-promotion is viewed as an especially effective way to stimulate PPV usage. [*See* TCI-R-0013041 and TWS 0004,2103.] Thus, while the capacity of an individual system may be limited today, that capacity can be expected to expand in the near future. This is evidenced in numerous documents produced in discovery in this litigation, is confirmed by industry surveys and trade press reports, and—for the majority of Time Warner systems described—is reflected in Time Warner's interrogatory responses. Moreover, the overall performance of the cable programming industry

since 1992 indicates that the capacity limitations programmers have encountered with individual systems have apparently not kept them from growing substantially.

8. Mr. Shooshan will testify that, in addition to the incentive created by emerging competition for cable operators to expand available capacity, the FCC's revised "going-forward" rules provide incentives for cable operators to make more channels available in order to add new services. There was considerable concern expressed by cable networks about the FCC's initial "going forward" rules. By limiting cable operators to a 7.5 percent markup on new program services added to regulated tiers, programmers believed that cable operators would have little incentive to expand available capacity or to launch new neworks. [*See*, for example, Comments of C-SPAN and C-SPAN 2 in the Matter of Implementation of Sections of the Cable Consumer Protection and Competition Act of 1992, MM Docket No. 92-266 (filed June 7, 1994.] Cable operators, in turn, argued that the initial rules failed to provide adequate financial incentives to add new services to regulated tiers. [*See*, for example, Comments of Time Warner Cable in the Matter of Implementation of Sections of the Cable Consumer Protection and Competition Act of 1992, MM Docket No, 92-266 (filed June 29, 1994).] As a result of the revised rules adopted by the FCC on November 10, 1994, cable operators can add "new produdct tiers" which are priced as the operators choose. In addition, cable operators may raise prices by up to 20 cents (exclusive of program costs), subject to an overall cap, for each new program service added to existing tiers. The substantial rise in subscribership for many programmers that occured as soon as the rules were revised to provide greater economic incentives for carriage is another indication that, to the extent programmer growth has been constrained in the short term, this has been a result of operator responses to rate regulation rather than must-carry requirements. Cable networks are

now clearly proceeding on the assumption that these rules will result in expanded channel capacity and are projecting increases in revenues over the next few years consistent with such an assumption.

9. Mr. Shooshan will testify that even in the short term, before capacity is expanded, the amount of capacity "foreclosed" by the must-carry requirements has been minimal. Moreover, in the future, as capacity expands in response to competition and regulatory incentives, the percentage of cable system capacity consumer by must-carry stations will steadily decline. At present, the average number of must-carries is small. For example, according to Time Warner, the average number of channels occupied by must-carry stations is 4.2. In addition, the average number of must-carries is small relative to the average system capacity. For the Time Warner systems, must-carries occupy 9.1 percent of capacity. The number o channels occupied by "new" must-carries (*i.e.*, stations that have been added since the current must-carry rules became effective) is substantially smaller. Based on information supplied in Time Warner's interrogatory responses, new must-carries appear to occupy about 2 percent of channel capacity of Time Warner cable systems. This percentage is consistent with the industrywide data Mr. Meek has found. In the future, average channel capacity can be expected to increase far more rapidly than the number of must-carries, further minimizing the impact of the law on both cable operators and cable networks.

10. Mr. Shooshan will testify that, in the relatively few instances where cable networks allege adverse effects from the presence of must-carry stations, there may be a variety of otaher explanations for the alleged "injury." The FCC's initial "going-forward" rules apparently caused cable operators not to add new networks. C-SPAN suggested that the initial rules had an especially adverse impace on low-cost and no-cost services, since the rules gave

operators the incentive to carry higher-priced services to take advantage of the "rate base effect." [*See* Comments of C-SPAN and C-SPAN 2, at pages 5-6.] Furthermore, uncertainty about the rules apparently caused cable operators to delay making decisions about adding new networks. [*See* Comments of E! Entertainment Television Inc. in the Matter of Implementation of Sections of the Cable Consumer Protection and Sompetition Act of 1992, MM Docket No. 92-266 (filed June 29, 1994) at page 2.] Concern about these effects of the FCC's rules was strongly conveyed to the Commission in comment filed by cable networks. Moreover, the rate regulation rules gave cable operators incentives to retier which may account for some of the repositioning that has occurred in the period since regulation. In some instances, the price schedules proposed by some cable networks may have been at odds with the incentives created by FCC rules for cable operators to retier or expand "a la carte" offerings and thus may have caused operators to decline to carry those networks. [*See* TB 0004992.]

11. Second, quite apart from the regulatory effects, cable operators may simply have chosen not to carry a particular cable network for reasons unrelated to must-carry. A cable operator may decline to carry a cable network because there are "better" alternatives available. For example, in one instance where the Family Channel reported being dropped, BET was added. In an instance whene E! was not added, BET was. The decision to drop or decline to add a particular cable network may be based on a variety of factors. A cable operator may simply desire to add a more popular program service, may want to avoid duplicating a type of service that is already available (especially if the cable operator has an equity interest in the available service) or may decide to carry a service that offers better financial terms. In some cases, a cable operator may decline to add or decide to drop or reposition a nonaffiliated cable network in order to

make room for an affiliated cable network. For example, while E! reported instances where it was not added by Jones, Jones Computer Network was. Lifetime reported being dropped or repositioned by a number of TCI systems which chose to add Starz, a new program service in which TCI has an equity interest through its stake in Liberty Media. In considering the environment for expanding carriage of the Cartoon Network which was launched while the FCC was considering the new must-carry rules, Turner acknowledged that "equity networks" get carriage ahead of nonequity networks. [*See* TB 0009930.]. Turner also pointed to "equity partners" as one of the major reasons for the rapid growth of the Discovery Channel. [*See* TB 0009931.] While cable operators will certainly carry some non-affiliated cable networks, operators have an incentive to carry affiliated networks. By carrying affiliated networks, cable operators increase the profits from their equity stakes. Furthermore, future cable networks can be expected to sell equity on favorable terms to cable MSOs that have a reputation for giving preference to affiliated networks.

12. Mr. Shooshan will testify that there are many other factors that may explain a cable operator's decision not to carry a particular cable network. For example, a cable network may not get carried by a cable operator who is purposely limiting the number of program services caried in order to build the value of the ones he does offer or to expand the capacity devoted to, or reserved for, other types of service, *e.g.*, to provide video-on-demand to meet anticipated satellite and telephone company competition. In some instances where a cable network alleges it was dropped, repositioned or not added, the action may have resulted from the cable operator's voluntary decision to carry a service under terms of a retransmission consent agreement.

13. Mr. Shooshan will opine that, because of the pendency of this litigation, cable operators have the in-

centive to point to the addition of must-carry stations as the basis for a decision not to carry a cable network, even if that decision was actually based on one of the other factor discussed above. It would be in the operator's interest to tell each spurned cable network suitor that "it it were not for must-carry, yours would be the first network I would add." In fact, as their interrogatory responses make clear, plaintiff cable networks "harms" are based primarily on what they were told by cable operators. In their responses, it is clear that plaintiffs apparently have no independent basis for determining whether a particular cable operator had avaailable capacity or whether he may have added other new networks at a time when he was denying carriage to one of them. There is also evidence that when cable decided to add a new service, frequently as the result of decisions at the MSO level, capacity was "magically found" without the need to drop an established network. [*See* TCI-R-0013041.] Mr. Shooshan will testify on the basis of the foregoing that, for any particular network, there is little basis to conclude that *it* would have been carried on the approximately 2 percent of capacity currently being occupied by "new" must-carry stations.

14. Based on all of these considerations, Mr. Shooshan will testify that cable programmers continue to perform well and grow, that the alleged impact of must-carry rules on cable programmers has been minimal and that even this minimal alleged impact will diminish in the near future because of substantial expansion in channel capacity.

15. Mr. Shooshan will also testify that the alleged adverse impacts of the must-carry requirements on cable operators are also attenuated. As noted above, the available evidence indicates that only a small fraction of operators' channel capacity is being used for "must-carry" stations, and a significantly smaller fraction is being used for stations that have been added as must-carries since

the current rules became effective. Of the injuries alleged, relatively few involve instances where cable operators were forced to *drop* programming to make room for new must-carries. Thus, operators retain control over the use of the overwhelming majority of their channel space. The majority of adverse impacts alleged by the plaintiff cable operators were simply assertions that a small number of available channels were "taken off the market by must carry." Apparently, in most of these instances, the system had other capacity available; that is, was not "channel-locked." For example, according to a summary filed by plaintiff cable operators, only 37 percent of TCI's cable systems were impacted by the new must-carry rules. Of the systems impacted (where TCI reported one or more channels were "taken off the market"), only 25 percent were designated as channel-locked. [*See* Disclosures of Plaintiffs Turner Broadcasting System, Inc., *et al.* and National Cable Television Association (April 14, 1995)at pages 30-75.] Thus, based on plaintiffs' own data, less than 10 percent of TCI's systems had no excess capacity available as a result of adding new must-carry stations.

16. Mr. Shooshan will testify that any adverse impact the must-carry rules have had on operators—like the impace on cable programmers—will substantially diminish with the passage of time. Notwithstanding the must-carry requirements, it appears that cable operators are adding capacity, especially in the aftermath of the FCC's revision of its "going-forward" rules. And, with further expansions of channel capacity expected to occur in the future, cable operators will retain significant discretion to carry cable programming that they have a genuine interest in carrying.

Table 1

Subscribers (Year-end)
(All Cable Networks)

1990-1995

Year	Subscribers (Millions)
1990	51.7
1991	53.4
1992	55.2
1993	57.2
1994	58.8
1995 (estimated)	60.1

Source: Paul Kagan Associates, Inc., *Cable TV Programming*, September 24, 1994, p. 3 and September 30, 1994, p. 2.

Table 2

License Fee Revenues
(All Cable Networks)

1990-1995

Year	Million Dollars
	$1,100
1991	1,321
1992	1,503
1993	1,868
1994	2,057
1995 (estimated)	2,222

Source: Paul Kagan Associates, Inc., *Cable TV Programming*, September 24, 1993, p. 3 and September 30, 1994, p. 2.

Table 3

Advertising Revenues
(All Cable Networks)

1990-1995

Year	Billion Dollars
1990	$1.802
1991	2.046
1992	2.338
1993	2.749
1994 (estimated)	3.146
1995 (estimated)	3.526

Source: Paul Kagan Associates, Inc., *Cable TV Financial Databook*, June 1994, p. 52.

Table 4

Average Advertising Revenues
(All Cable Networks)

1990-1995

Year	Dollars per Subscriber
1990	$34.9
1991	38.3
1992	42.4
1993	48.1
1994 (estimated)	53.5
1995 (estimated)	58.7

Source: Paul Kagan Associates, Inc., *Cable TV Financial Database*, June 1994, p. 52 and *Cable TV Programming*, September 24, 1998, p. 3 and September 30, 1994, p. 2.

Table 5

Viewing Share
(All Cable Networks Combined)

1990-1994
Calendar Year Averages

	1990	1991	1992	1993	1994
All TV Homes	(1)	(2)	(3)	(4)	(5)
All Cable Homes	21	24	25	26	26
	32	35	36	37	38

Source: Paul Kagan Associates, Inc., *Cable TV Advertising*, February 28, 1995, p. 4.

Table 6

Number of Cable Systems
Which Carry Plaintiffs' Networks

Parent Firm (1)	Network (2)	Launch Date (3)	October 1992 (4)	September 1994 (5)	March 1995 (6)
A&E Television Networks	A&E	February 1984	8,221	9,224 [a]	9,542
	The History Channel (THC)	NA	—	—	200
Black Entertainment Television, Inc.	BET	January 1980	1,951	2,413	2,471
Time Warner Entertainment Co., L.P.	Court TV	July 1991	625	950	1,100
National Cable Satellite d/b/a C-SPAN	C-SPAN	March 1979	4,253	4,799	5,200
	C-SPAN 2	June 1986	933	1,200	1,357
Discovery Communications, (Inc. (DCI)	Discovery	June 1985	4,007	4,192	4,222
	The Learning Channel (TLC)	August 1979	895	1,575	1,901
E! Entertainment Television, Inc.	E!	July 1987 [b]	856	1,696	1,873

Table 6—Continued

Parent Firm (1)	Network (2)	Launch Date (3)	October 1992 (4)	September 1994 (5)	March 1995 (6)
International Family Entertainment	The Family Channel	April 1977	12,355	12,474	12,601
Lifetime Entertainment Services	Cable Health Club	October 1993	—	26	159
	Lifetime	February 1984	6,002	7,089	7,363
QVC, Inc.	QVC	November 1986	4,145	5,030	5,269
	Q2	October 1991	451	555	838
Landmark Communications, Inc.	The Travel Channel	February 1987	396[c]	658[d]	—[e]
USA Networks	USA Network	September 1977	9,528	9,846	10,036
	Sci-Fi Channel	September 1977	448	2,012	2,416
Turner Broadcasting System, Inc. (TBS)	WTBS	December 1976	18,148	18,787	18,902
	CNN	June 1980	18,951	20,162	20,394
	Headline News	January 1982	10,675	11,376	11,683
	TNT	October 1988	10,086	12,276	13,333
	Cartoon Network	October 1992	197	1,059	1,288

722

— not applicable
NA not available

723

[a] Plaintiff alleges increase due to stepped-up marketing efforts to SMATV systems (approximately 700 of 1,008).

[b] Movietime relaunched as E! Entertainment TV in June 1990.

[c] Cable systems as of May 21, 1992.

[d] Cable systems as of January 1, 1994.

[e] Plaintiff's response to interrogatory is incorrect (number of subscribers rather than cable systems).

Source: Number of cable systems: Data provided by plaintiffs in response to defendants' interrogatories in *Turner Broadcasting System, Inc., et al. v. Federal Communications Commission, et al.*

Network Launch Date: Paul Kagan Associates, Inc., *The Cable Financial Databook*, June 1994, p. 53.

Table 7

Number of Cable Subscribers to Plaintiffs' Networks

Network (1)	1988	October 1992 (3)	September 1994 (4)	March 1995 (5)
A&E	30,683,487	49,601,734	54,920,818	57,003,057
The History Channel (THC)	—	—	—	1,800,000
BET	18,402,888	29,683,564	34,707,953	36,363,333
Court TV	—	7,100,000	15,600,000	NR
C-SPAN	39,100,000	53,600,000	58,640,000	62,400,000
C-SPAN 2	14,300,000	24,300,000	31,200,000	37,000,000
Discovery	38,095,000	58,877,000	62,032,000	63,578,000
The Learning Channel (TLC)	—[a]	17,550,000	30,692,000	34,493,000
E!	11,500,000	21,500,000	25,100,000	27,614,000
The Family Channel	36,602,149	49,852,824	54,113,624	54,878,961
Cable Health Club	—	—	620,461	3,856,559
Lifetime	40,165,000	56,407,000	58,991,000	57,969,000
QVC	13,725,000	44,382,080	49,079,478	50,266,102
Q2	—	7,406,636	11,903,774	12,013,650
The Travel Channel	—	13,257,678	14,945,958	16,488,288
USA Network	41,885,759	51,041,619	56,664,040	56,806,118
Sci-Fi Channel	—	2,585,963	13,560,180	16,543,299
WTBS	47,912,000	59,645,000	61,998,000	63,644,000
CNN	49,268,000	60,959,000	63,174,000	64,081,000
Headline News	34,713,600	51,163,000	54,273,000	55,537,000
TNT	19,900,000	5,820,500	61,416,000	61,965,000
Cartoon Network	—	1,878,020	11,393,000	13,461,000

— Not applicable
NR not reported

[a] TLC was acquired by Discovery Communications, Inc. just prior to September 1991, when it had 15,556,000 subscribers.

Source: Data provided by plaintiffs in response to defendants' interrogatories in *Turner Broadcasting System, Inc., et al. v. Federal Communications Commission, et al.* Dates are approximate since plaintiffs' responses were not uniform.

Table 8

Advertising Revenues of Parent Firms or Networks

1990-1994

(Fiscal Years, Except as Noted)

Parent Firm or Network (1)	1993 (5)	1994 (6)	1990 (2)	1991 (3)	1992 (4)
A&E Television Networks[a]	$ 44,475,000	$ 60,385,000	$ 73,674,000	$ 94,940,000	$117,000,000
Black Entertainment Television, Inc.	23,300,000	29,900,000	32,200,000	38,100,000	45,600,000
Discovery Communications, Inc.	45,636,000	69,409,000	88,947,000	115,879,000	NR
E! Entertainment Television, Inc.	3,114,970	5,156,361	6,920,360	12,335,443	18,655,427
Lifetime Entertainment Services	95,751,000	118,810,000	136,057,000	148,198,000	NR
Time Warner Entertainment Company, L.P.[b]	44,647,000	51,633,000	63,598,000	75,471,000	NR
The Travel Channel, Inc.[c]	NR	NR	2,699,000[d]	4,689,000	7,586,000
Turner Broadcasting System, Inc.	635,040,000	675,364,000	772,843,000	857,458,000	NR
USA Networks	164,800,000	195,921,000	218,739,000	228,662,000	NR

NR not reported

Note: Plaintiffs which did not provide advertising revenues in response to interrogatories are not listed.

[a] Calendar year figures

[b] Not clear whether fiscal year or calendar year figures.

[c] Advertising revenues were not reported prior to 1992 because The Travel Channel, Inc. was acquired by Landmark Communications, Inc. in early 1992.

[d] Based on figures from March 1992 through December 31, 1992.

Source: Data provided by plaintiffs in response to defendants' interrogatories in *Turner Broadcasting System, Inc., et al. v. Federal Communications Commission, et al.*

EXHIBIT A

[Curriculum Vitae]

EXHIBIT B

[Strategic Policy Research, Inc.
1995 Hourly Billing Rates]

* * * *

[EXHIBIT E]

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

PLAINTIFF TIME WARNER ENTERTAINMENT COMPANY, L.P.'S THIRD SUPPLEMENTAL RESPONSE TO DEFENDANTS' FIRST JOINT SET OF INTERROGATORIES *

Interrogatory No. 12:

Identify (a) the percentage of your channel capacity that is being used to carry broadcast stations pursuant to the must-carry provision of the Cable Act; and (b) the percentage of your channel capacity that is being used to carry broadcast stations pursuant to the retransmission consent provision of the Cable Act. Fully explain the actual basis for your response.

Response to Interrogatory No. 12:

Subject to and without waiver of any of the objections, including the General Objections, set forth in TWE's prior interrogatory responses, TWE responds as follows:

a. estimated at 9.90%.

b. estimated at 11.32%.

---

* These responses are based upon information regarding 274 systems out of 284 Time Warner Cable systems. We are continuing to attempt to obtain accurate figures for the remaining 10 systems. However, we believe the figures herein provided generally are representative for TWE as a company.

Interrogatory No. 14:

Identify the range and average channel capacity, and the range and average number of unused stations, for your cable systems in the years 1985, 1992 and 1994.

Response to Interrogatory No. 14:

Subject to and without waiver of any of the objections, including the General Objections, set forth in TWE's prior interrogatory responses, TWE responds as follows:

Year	Average Channel Capacity	High Capacity	Capacity Low	Average Number of Unused Channels	High Number of Unused Channels	Low Number of Unused Channels
1985	30.39	120	12	1.18	23	0
1992	40.90	109	5	.40	10	0
1994	43.70	110	18	.15	5	0

Interrogatory No. 18:

For each of the years 1992 and 1994, identify the number of your cable systems that utilized 100 percent of their channel capacity, and the percentage that these systems constituted of your total systems and total subscribership.

Response to Interrogatory No. 18:

Subject to and without waiver of any of the objections, including the General Objections, set forth in TWE's prior interrogatory responses, TWE responds as follows:

Year	Number of Cable Systems Utilizing 100 Percent of Channel Capacity	Percentage of Total Systems
1992	229	88.42%
1994	254	92.70%

DATED: Washington, D.C.
March 7, 1995

WILLKIE FARR & GALLAGHER

by /s/ Brian Conboy
BRIAN CONBOY
(D.C. Bar No. 152025)
Theodore Case Whitehouse
(D.C. Bar No. 298331)
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20036
(212) 328-8000

Attorney for Plaintiff
Time Warner Entertainment
Company, L.P.

Stuart W. Gold
Rowan D. Wilson
Edward J. Weiss
Cravath, Swaine & Moore
Worldwide Plaza
825 Eighth Avenue
New York, NY 10019
(212) 474-1000

[Certificate of Service Omitted]

* * * *

[EXHIBIT H]

TABLE 3

PLAINTIFF PROGRAMMERS' ALLEGATIONS OF DROPS AND REPOSITIONS

Network	Drops Alleged	Repositions Alleged	Net change in systems carrying network between October 1992 and March 1995
A&E	8	12	+1,321
The History Channel	0	0	+200
BET	1	11	+520
Court TV	5	0	+475
C-Span	17	0	+947
Discovery	0	0	+215
The Learning Channel	2	0	+1,006
E!	10	4	+1,017
The Family Channel	2	6	+246
Lifetime Entert. Services	18	70	+1,359
QVC	35	7	+1,124
Q2	12	0	.. +387
The Travel Channel	55	1	+262
USA Networks	0	45	+508
Sci-Fi Channel	0	1	+1,966
CNN	0	38	+1,443
Headline News	0	33	+1,008
TBS	0	23	+754
TNT	0	0	+3,247
Cartoon Network	0	4	+1,091
Turner Classic Movies	0	2	+590
Cinemax	0	0	(133)
CNN Int'l	0	1	NA
HBO	0	0	(144)

Explanatory Notes

Column 2: 1. The numbers in Column 2 compile the information provided in Plaintiffs' April 14, 1995 Disclosures. DAE VOL. VII.A & VII.B, EXH. 35-45, 60 (exh. b) & 62.

2. Any allegation of a drop or reduced carriage is designated a "drop." In the limited number of instances where a programmer alleges that it was repositioned and dropped, this is listed as a drop to avoid double counting. A limited number of instances where a programmer alleges that certain actions "may" or "might" be taken are not included in the totals.

3. Information from Plaintiff E! has been based on the first two tables provided in its April 14, 1995 Disclosures. The third table is designated as under investigation and has not been included in these totals.

4. In addition to the figures set forth above, plaintiff C-SPAN has also alleged that it was dropped (or plans were made to drop it) on 20 systems and its hours were reduced on 24 systems, but that these situations were resolved. C-SPAN II has made similar allegations concerning 8 and 10 systems respectively. These numbers are not included in the chart because it is not clear how many of these allegations involve actual drops. *See* DAE VOL. VII.A, EXH. 37.

5. A small fraction of plaintiffs' allegations are specifically attributed to retransmission consent requirements (with no reference to must carry requirements), and those allegations are not included in the totals.

Column 3: 6. Any allegation of a channel repositioning or movement to a less favorable tier is listed as a repositioning.

Columns 4: 7. The information in Column 4 is derived from Plaintiffs' interrogatory responses. *See* DAE VOL. VII.A & VII.B, EXH. 3, 6, 8, 12, 15, 20, 23, 26, 32 & 60. In some cases, plaintiffs' system estimates apparently include private cable systems ("SMATVs").

[EXHIBIT I]

TABLE 4

PLAINTIFF PROGRAMMERS' ALLEGATIONS OF SYSTEMS ON WHICH THEY HAVE NOT BEEN ADDED AS A RESULT OF MUST CARRY REQUIREMENTS

Programmer	Cable Systems on Which Programmer *Alleges* it Has Not Gained Carriage Because of Must Carry Requirements	Net Increase or Decrease in Systems on Which Programmer is Carried October 1992-March 1995)
The History Channel	13	+200
BET	107	+520
Court TV	34	+475
C-Span	0	+947
C-Span II	0	+424
Discovery	0	+215
The Learning Channel	29	+1,006
E!	55	+1,017
The Family Channel	1	+246
Lifetime Entert. Services	6	+1,359
QVC	1	+1,124
Q2	2	+387
The Travel Channel	76	+262
USA Networks	0	+508
Sci-Fi Channel	71	+1,966
CNN	0	+1,443
Headline News	7	+1,008
TBS	0	+754
TNT	0	+3,247
Cartoon Network	137	+1,091
Turner Classic Movies	108	+590
CNN Int'l	40	No information
HBO	15	(144)
Cinemax	4	(133)
A&E	2	+1,321

Explanatory Notes

Column 2: 1. The numbers in Column 2 compile the information provided in Plaintiffs' April 14, 1995 Disclosures. DAE VOL. VII.A & VII.B, EXH. 35-45, 60 (exh. b) & 62.

2. Any allegation that a programmer has not been added, or its hours of programming have not been increased, as a result of must carry requirements is included in these totals. A small fraction of plaintiffs' allegations are specifically attributed to retransmission consent requirements (with no reference to must carry requirements), and those allegations are not included in the totals.

3. Information from Plaintiff E! has been based on the first two tables provided in its April 14, 1995 Disclosures. The third table is designated as under investigation and has not been included in these totals.

4. In most instances, the allegations by plaintiff HBO involve situations in which HBO was already being carried, but was allegedly denied an opportunity for carriage on multiple channels ("multiplexing"). Allegations involving HBO on Espanol have been combined with HBO. The totals for HBO understate the number of HBO's allegations because three of those allegations relate to groups of "cable systems" but do not state the number of systems involved. These allegations have been excluded for purposes of this chart, and as a result the chart understates HBO's allegations.

Columns 3: 5. The information in Column 3 is taken from Plaintiffs' interrogatory responses. *See* DAE VOL. VII.A & VII.B, EXH. 3, 6, 8, 12, 15, 20, 23, 26, 32 & 60. In some cases, plaintiffs' system estimates apparently include private cable systems ("SMATVs").

* * * *

[EXHIBIT K]

March 23, 1995

REPORT ON IMPACT OF GOING FORWARD RULES

On November 10, 1994, the Commission adopted *Going Forward* rules to provide cable operators with sufficient incentives and flexibility to add new networks while insuring that subscribers receive more for their money than they did prior to regulation. The purpose of this report is to summarize the impact of the rules to date. The early data show that the *Going Forward* rules are having their intended effect: operators are adding new networks to their systems; new and existing networks are gaining subscribers through increased carriage; and subscribers are receiving more for their money than prior to regulation.

Going Forward provides two specific ways for operators to add new programming services. First, operators can add channels to cable programming service tiers ("CPSTs") at a price of not more than 20 cents per channel plus license fees (with a total increase over two years not to exceed $1.50). An additional 20 cent mark up may be taken in 1997 if an additional channel is added in that year. (In 1997 and beyond operators may recover all of their license fees.)

Alternatively, operators can add new tiers of programming called New Product Tiers ("NPTs"). For NPTs, operators are free to charge whatever the market will bear. The *Going Forward* rules also allow operators to offer channels already on regulated tiers on an a la carte basis, and, so long as they are offered on traditionally regulated tiers, to be offered on NPTs as well.

The *Going Forward* rules, while simple, provide protection to consumers and flexibility to programmers and operators. For consumers, the rates and composition of the existing tiers of service are left largely the same, with slightly higher rates for more channels. In other words,

the consumer does not have to pay significantly more than he or she already does. However, if desired, the consumer can pay for as many new channels as the cable operator chooses to offer, by purchasing NPTs. The operator can improve service on the existing tiers by offering more product at a relatively low price, and can gain additional revenues by offering new channels on NPTs. Programmers benefit by gaining access to additional tiers and by reaching more subscribers.

Programming Gains After the Going Forward *Rules*

In the months following the reelase of the *Going Forward* rules, there has been much discussion of the rules, by cable programmers and system operators alike. Representatives of both sides of the industry praised the new rules at a conference on the media held by PaineWebber in December 1994. At that conference, the representatives of cable system owners, including TCI (the single largest cable system owner), Comcast, and Cablevision all said that they would take advantage of the *Going Forward* rules by adding new channels. According to Bernard Shotters, Chief Financial Officer of TCI, "Going Forward, pass-through rules on programming should create at least $100 million for the year in revenue and cash flow increases."

Wall Street analysts saw the positive implications as well. For instance, Merrill Lynch analyst Jessica Reif predicted in the January 30, 1995 issue of *Forbes* that companies that added to CPSTs all six channels allowed would increase cash flow by as much as 8%.

It appears operators are following through on these statements. In the few months since the release of the *Going Forward* rules, programmers and operators have been signing deals that will bring cable networks to millions of viewers who have not previously been able to receive them. The Disney Channel gained 4.9 million subscribers by moving from premium service to CPSTs (*Com-*

munications Daily, January 16, 1995). Bravo, a film and arts network, has also moved from the premium services category to the expanded basic tier. As a result, the channel's distribution has increased by at least 2 million and is now available in 20 million homes (*Electronic Media*, January 16, 1995).

The January 16, 1995 issue of *Broadcasting & Cable* reported that "[c]able networks say system operators are literally 'going forward' with the FCC's new rules on program packaging. Small and midsize cable networks already are boasting expanded distribution as a result of the FCC's two-month-old going forward rules." The article went on to list 12 existing cable channels that can now reach millions of additional subscribers as a result of the new Going Forward rules. (See chart 1, attached):

The Learning Channel	up 4.0 million
Prevue Channel	up 3.9 million
Country Music Television	up 3.5 million
Cartoon Network	up 3.4 million
C-SPAN 2	up 2.8 million
Cable Health Club	up 2.7 million
E!	up 2.4 million
Sci Fi Channel	up 1.8 million
Court TV	up 1.7 million
American Movie Classics	up 1.5 million
The Travel Channel	up 1.2 million
TV Food	up 1.0 million
Comedy Channel	up 1.0 million
Bravo	up 1.0 million

New networks are benefitting as well. The same article reports that Canel de Noticias will gain one million subscribers due to the *Going Forward* rules, and that America's Talking will gain 2.5 million subscribers.

While some have dismissed the *Going Forward* rules as a "non-event" (See testimony of Decker, Anstrom, President and CEO, NCTA, before the Senate Committee on Commerce, Science & Transportation, March 21, 1995, p. 17), other reports characterize the results very differently.

For example, *Electronic Media*, in its January 16, 1995 story headlined "Rules Helping Cable Networks Pick Up Homes" reported that: "Going forward is exactly what several cablenetworks have done since the Federal Communications Commission issued its new rules in November. Most networks distributed to fewer than 40 million homes before the 'going forward' rules clarification, which eased the way for cable operators to add new networks, are reporting the addition of at least a million homes prior to Dec. 31. Many say they expect to add millions more my the end of the first quarter. . . ." Craig Sherwood, International Family Entertainment's Cable Health Network senior vice president of affiliate relations, said it was a "great Christmas." George Bodenheimer, senior vice president of affiliate sales and marketing for ESPN, said "the rules helped ESPN to have 'one of the finest months in our short history' in December and bring the transmission channel's distribution to 17.4 million homes.

CableWorld on January 2 ran an article entitled "Going Forward Gold? Savvy Programmers See Some Big Gains." It reported "With cable operators scrambling ot add new channels so they can boot their rates under the FCC's so-called 'going-forward' rules, several new and mid-size cable programmers are claiming strong distribution gains from holiday marketing blitzes. . . . Although the tally is far from complete, such aggressively marketed services as Cable Health Club, Courtroom Television Network, The Learning Channel, Television Food Network and Country Music Television say they'll each pick up more than 4 million homes by the time the dust settles in July. . . . We've been planting the seeds for a couple of years, said Bill Goodwyn, senior VP-affiliate sales/relations at Discovery Networks Inc. 'Now's the time to reap the harvest.'"

Kay Koplovitz, the CEO of USA Networks, wrote in the *Wall Street Journay* that the Sci-Fi Channel recently added over a million new subscribers in the New York area alone. Ms. Koplovitz noted that the Sci-Fi Channel was launched just days before enactment of the 1992 Cable Act and continues to "outstrip our expectations" with respect to subscribership. (*Wall Street Journal*, March 6, 1995). Similarly, *CableFAX* of February 14, 1995 reports "The Faith and Values Channel has gained almost 1.5 million subscribers in the last month, the network said, citing the FCC's 'going forward' rules. F&V is now seen in more than 22.6 million HHs on 1,500 cable systems serving more than 4,600 communities nationwide."

The programming industry seems to be gaining confidence in its ability to gain carriage due to the *Going Forward* rules. This is reflected in a large increase in the number of national cable networks being launched. Thus far this year, 133 new national cable networks have announced plans to begin service in 1995 (see chart 2 for a partial list), which will more than double the existing 113 national cable networks currently in service. By comparison, only 46 channels were launched during the period from January 1, 1990 to September 1, 1993, immediately prior to regulation. (The 113 cable networks currently in service compares with 80 networks in service in 1992.) It is important to note that the Commission's program access rules have also played a role in this burst of new network launches. They guarantee cable's competitors access to programming, thus opening the way to competition and providing programmers with more venues through which they can reach audiences.

The *Going Forward* rules have meant that subscribers have benefitted by receiving more product for less money. Operators are allowed to increase monthly rates an average of 25 cents per new channel offered on the CPST, representing 20 cents in markup by the operator and

approximately 5 cents in license fee for the programmer. This amount is about half of the 49 cents per channel subscribers currently pay on average for existing services. Prior to regulation, subscribers paid 69 cents per channel for the average channel added to CPSTs. In short, under *Going Forward* consumers are getting between two and three times more for their money for new services offered on regulated tiers.

Channel Additions on New Product Tiers

Going Forward also gave operators the ability to add channels on New Product Tiers.

Many operators are planning substantial increases in the number of channels offered beyond expansions of existing packages. According to a survey by the BETA corporation, almost 30% of cable operators plan to add at least 20 new channels to their systems in 1995. The study, done less than a month after the *Going Forward* rules were announced, reports that of those operators who plan on launching new tiers in 1995, almost 40% plan on using NPTs.

The trade press reports that programmers prefer being placed on NPTs to the earlier "a la carte" packages." As *CableWorld* reported on February 20, "in the last three years programmers had opposed being placed on a la carte tiers with penetration rates that top off at 10%. Instead, programmers are pinning their distribution hopes on New Product Tiers. Most will feature more networks and lower prices, and, programmers feel, higher penetration rates than their a la carte predecessors notch." As a result, some programmers are designating products specifically for NPTs. *CableVision*, December 26, 1994, for example, reports that "Discovery Networks launched four new niche services designed specifically for the new product tier, gambling that future services will flourish as tightly targeted programming entities rather than broad-based networks."

One of the early experimenters with NPTs is Warner Cable Communications, Inc., the Time Warner-affiliated cable system in Akron, Ohio. This system has 107,200 subscribers to basic service. Warner has two NPTs. The first consists of 3 channels (WTBS, Discovery, and American Movie Classics), and costs $2.31. The second consists 12 channels (WGN, ESPN 2, Comedy Central, the Cartoon Network, E!, Country Music Television, The Learning Channel, Bravo, Court TV, the History Channel, Local Programming, and Faith & Values), and costs $2.95 per month. However, subscribers can receive both NPTs, a total of 15 channels, for $3.26. According to Bill Farmer, the Vice President for Operations for the system, the first NPT has a 81% penetration rate; the second has a 70% penetration rate. The lower penetration rate on the second NPT is due to the fact that not all areas served by Warner can receive this package yet. In areas where the second NPT is available, it has a 79% penetration rate, with most subscribers receiving both NPTs.

Another example of an NPT is found on the King of Prussia, Pennsylvania affiliate of Lenfest Cable. This system has an NPT which consists of the Sci-Fi and History channels. Approximately one-third of the 15,000 subscribers to the system subscribe to the NPT. There is no charge for the NPT now, but, starting in September or October, there will be a $1.95 per month charge.

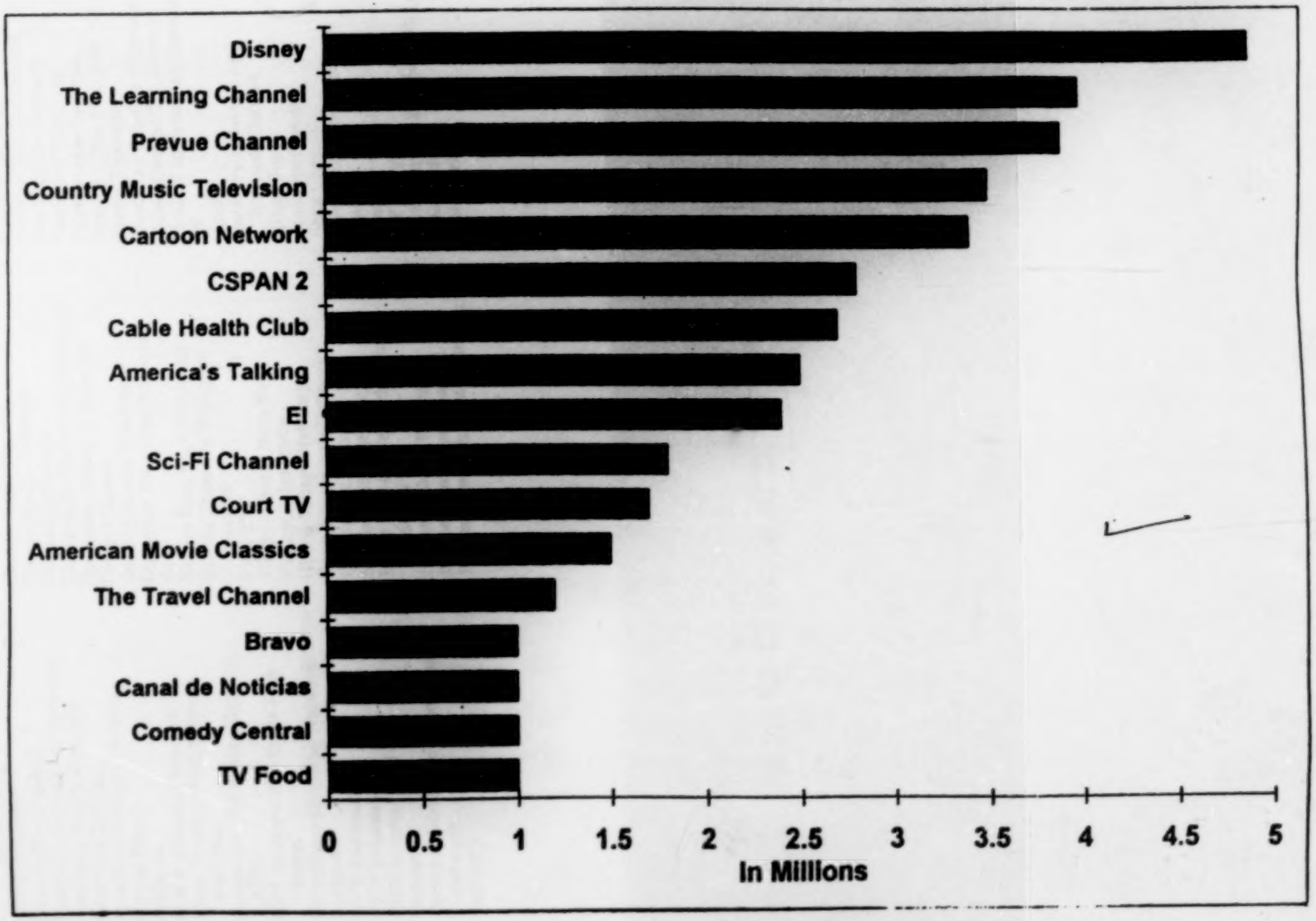
Many systems plan to add NPTs in the coming months. The Tallahassee, Florida affiliate of Comcast is planning to launch an NPT on April 1 consisting of Comedy Central, the Sci-Fi Channel, Bravo, Encore, and possibly more channels, for a charge of $1.50 per month. The Scripps Howard Cable affiliate in Dallas, Georgia, will be adding an NPT in May. Other Scripps Howard affiliates planning to add NPTs in the coming months include the systems in Scarmento, California, and in Knoxville and Nashville, Tennessee. The TCI affiliate in Sterling, Colorado is planning to launch an NPT in late summer.

The benefits of NPTs will increase with the advent of competition and digital compression technology. Competition will push cable operators to be more creative in their packaging by forcing the operators to give subscribers more and better. This pressure for creative packaging will channel through the flexibility built into the NPT provisions of the *Going Forward* rules. Digital compression will also require more creative packaging of channels, thus making NPTs more valuable. One example of creative packaging is found on the Akron, Ohio system described above. This system is offering five channels on an a la carte basis, while simultaneously including them on its regulated expanded basic tier.

Conclusion

The 1992 Cable Act was written to promote increased competition while protecting consumers, with the least possible amount of regulatory burden on the industry. The *Going Forward* rules are one of the means by which the Commission is fulfilling these Congressionally-mandated objectives. The consumer is protected through limits on charges for new channels, and is offered more services for little additional money. Cable operators are given incentives to add ned programming, the flexibility to add unregulated NPTs, and the ability to generate increased revenues. Programemrs receive opportunities to gain additional subscribers, both on NPTs and on CPSTs. The data indicates that the *Going Forward* rules are already having this effect.

Chart 1



Source: Broadcasting Cable, January 16, 1995; Communications Daily; Variety, February 20-26, 1995

New National Cable Networks With Launches Planned for 1995

ATN, The Automotive Television Network
ATV: Advertising Television
Action America
Adam & Eve Channel
America's Collectibles Network
America's Health Network
America's Talking
American Political Channel
Animal Planet
Applause
Arts & Antiques Network
Asian Broadcasting Network Multiplex
Automotive Television Network/ ATN
BET on Jazz: The Cable Jazz Channel
BET-Home Shopping Network
Booknet
CNN International
CNN International
CNN International
Camnet
Career & Education Opportunity Network
Catalog 1
CelticVision-The Irish Channel
Children's Cable Network
Classic Arts Showcase
Classic Music Channel
Classic Sports Network
Collectors Channel
Conservative Television Network
Consumer Resource Network
Crime Channel
Cupid Network Television
Discovery Networks Multiplex
Eco
Encore Language Networks
Encore Thematic Multiplex Channels
FAD TV
FXM: Movies from Fox
Fitness Interactive
Global Village Network
Golden American Network
Health And Fitness
Hobby Craft Network
Home And Garden Television Network
Horizons Cable Network
Independent Film Channel
International Channel Multiplex
Jones Computer Network
Living
MOR Music TV Multiplex
Military Channel
National Health Network
New Culture Network
NewSport Television
Outdoor Life Channel
Ovation: The Fine Arts Network
Parent Television
Parenting Satellite Television
Planet Central TV Network
Product Information Network
Q2
Quark
Recovery Network And Wellness Channel
Ritmo Son
Romance Classics
Sega Channel
Showtime Networks, Inc.
Spice 2
Starz
TV Macys
TeleCompras Shopping Network
TeleNoticias
TeleNovelas

New National Cable Networks With Launches Planned for 1995—Continued

Telehit	Turner Classic Movies
Television Shopping Mall	Unnamed Music Video Network
The Auto Channel	Unnamed Womens Sports Network
The Box	Womens Sports Network
The CEO Channel	World African Network
The Game Channel	World Interactive Network (WIN TV)
The Gaming Entertaining Network	fx (Los Angeles & New York)
The Golf Channel	tv!
The Health Channel	
The Health Network	
The History Channel	
The Language Channel	
The PC Channel	
The Parenta Channel	
The Popcorn Channel	
The Singles Network	
The Talk Channel	
Time Traveler	
Trax: High Performance Television	

* * * *

[EXHIBIT M]

Table 1

License Fee Revenues
(All Cable Networks)

1990-1995

Year	Million Dollars
1990	$1,100
1991	1,321
1992	1,503
1993	1,868
1994	2,057
1995 (estimated)	2,222

Source: Paul Kagan Associates, Inc., *Cable TV Programming*, September 24, 1993, p. 3 and September 30, 1994, p. 2.

[EXHIBIT N]

Table 8

Advertising Revenues
(All Cable Networks)

1990-1995

Year	Billion Dollars
1990	$1.802
1991	2.046
1992	2.338
1993	2.749
1994 (estimated)	3.146
1995 (estimated)	3.526

Source: Paul Kagan Associates, Inc., *Cable TV Financial Databook*, June 1994, p. 52.

[EXHIBIT O]

Table 9

Average Advertising Revenues
(All Cable Networks)

1990-1995

Year	Dollars per Subscriber
1990	$34.9
1991	38.3
1992	42.4
1993	48.1
1994 (estimated)	53.5
1995 (estimated)	58.7

Source: Paul Kagan Associates, Inc., *Cable TV Financial Databook*, June 1994, p. 52 and *Cable TV Programming*, September 24, 1993, p. and September 30, 1994, p. 2.

[EXHIBIT P]

Table 10

Viewing Share
(All Cable Networks Combined)

1990-1994
Celendar Year Averages

	1990 (1)	1991 (2)	1992 (3)	1993 (4)	1994 (5)
All TV Homes	21	24	25	26	26
All Cable Homes	32	35	36	37	38

Source: Paul Kagan Associates, Inc., *Cable TV Advertising*, February 28, 1995, p. 4.

[EXHIBIT Q]

Table 11

Number of Cable Systems
Which Carry Plaintiffs' Networks

Parent Firm (1)	Network (2)	Launch Date (3)	October 1992 (4)	September 1994 (5)	March 1995 (6)
A&E Television Networks	A&E	February 1984	8,221	9,224[a]	9,542
	The History Channel (THC)	NA	—	—	200
Black Entertainment Television, Inc.	BET	January 1980	1,961	2,413	2,471
Time Warner Entertainment Co., L.P.	Court TV	July 1991	625	950	1,100
National Cable Satellite d/b/a C-SPAN	C-SPAN	March 1979	4,253	4,799	5,200
	C-SPAN 2	June 1986	933	1,200	1,357
Discovery Communications, Inc. (DCI)	Discovery	June 1985	4,007	4,192	4,222
	The Learning Channel (TLC)	August 1979	895	1,675	1,901
E! Entertainment Television, Inc.	E!	July 1987[b]	856	1,696	1,878
International Family Entertainment	The Family Channel	April 1977	12,355	12,474	12,601
	Cable Health Club	October 1993	—	26	159
Lifetime Entertainment Services	Lifetime	February 1984	6,002	7,089	7,363
QVC, Inc.	QVC	November 1986	4,145	5,030	5,269
	Q2	October 1991	451	555	838

Parent Firm (1)	Network (2)	Launch Date (3)	October 1992 (4)	September 1994 (5)	March 1995 (6)
Landmark Communications, Inc.	The Travel Channel	February 1987	396[c]	658[d]	—[a]
USA Networks	USA Network	September 1977	9,528	9,846	10,036
	Sci-Fi Channel	September 1992	448	2,012	2,416
Turner Broadcasting System, Inc. (TBS)	WTBS	December 1976	18,148	18,787	18,902
	CNN	June 1980	18,951	20,162	20,394
	Headline News	January 1982	10,675	11,376	11,683
	TNT	October 1988	10,086	12,276	13,333
	Cartoon Network	October 1992	197	1,059	1,288

— not applicable
NA not available

[a] Plaintiff alleges increase due to stepped-up marketing efforts to SMATV systems (approximately 700 of 1,008).

[b] Movietime relaunched as E! Entertainment TV in June 1990.

[c] Cable systems as of May 21, 1992.

[d] Cable systems as of January 1, 1994.

[e] Plaintiff's response to interrogatory is incorrect (number of subscribers rather than cable systems).

Source: Number of cable systems: Data provided by plaintiffs in response to defendants' interrogtaories in *Turner Broadcasting Systems, Inc., et al. v. Federal Commissions Commission, et al.*
Network Launch Date: Paul Kagan Associates, Inc., *The Cable Financial Databook*, June 1994, p. 53.

748

[EXHIBIT R]

Table 12

Advertising Revenues of
Parent Firms or Networks

1990-1994
(Fiscal Years, Except as Noted)

Parent Firm or Network (1)	1990 (2)	1992 (4)	1993 (5)	1994 (6)	(8) 1661
* A&E Television Networks[a]	$ 44,475,000	$ 60,385,000	$ 73,374,000	$ 94,940,000	$117,000,000
Black Entertainment Television, Inc.	23,300,000	29,900,000	32,200,000	38,100,000	45,600,000
Discovery Communications, Inc.	45,636,000	69,409,000	88,947,000	115,879,000	NR
* E! Entertainment Television, Inc.	3,114,970	5,156,361	6,920,360	12,335,443	13,655,427
Lifetime Entertainment Services	95,751,000	118,810,000	136,057,000	148,198,000	NR
Time Warner Entertainment Company, L.P.[b] *	44,647,000	51,633,000	63,598,000	75,471,000	NR
The Travel Channel, Inc.[c] *	NR	NR	2,699,00[d]	4,689,000	7,586,000
Turner Broadcasting System, Inc.	635,040,000	675,364,000	772,343,000	857,458,000	NR
USA Networks *	164,800,000	195,921,000	218,739,000	228,662,000	NR

NR not reported

Note: Plaintiffs which did not provide advertising revenues in response to interrogatories are not listed.

[a] Calendar year figures

[b] Not clear whether fiscal year or calendar year figures.

[c] Advertising revenues were not reported prior to 1992 because The Travel Channel, Inc. was acquired by Landmark Communications, Inc. in early 1992.

[d] Based on figures from March 1992 through December 31, 1992.

Source: Data provided by plaintiffs in response to de-fendants' interrogatories n *Turner Broadcasting System, Inc., et al. v. Federal Communications Commission, et al.*

749

[EXHIBIT T]

THE KAGAN MEDIA INDEX/
Sept. 30, 1994/p. 2 of 16

CHANNEL CAPACITY: MORE CHOICE, MORE CHALLENGES

Forty-two channels. The average TV household may not subscribe to all of them, but their homes are likely to be passed by cable carrying this number, 2½ times the number available just 10 years ago. Increased capacity might substantially alter the concept of "channel" and viewing patterns.

CHANNELS AVAILABLE
TO AVERAGE TELEVISION HOUSEHOLD *

Year	Average Cable Capacity	HP as % of All TVHH	Channels avail. to avg. TVHH
1964	—	—	5.3
1972	—	—	6.2
1976	—	—	7.9
1977	—	—	8.2
1978	—	—	8.4
1979	—	—	8.5
1980	—	—	9.4
1981	—	—	10.4
1982	—	—	12.3
1983	—	—	12.3
1984	23.4	71.3%	16.7
1985	24.7	74.8	18.5
1986	25.5	79.2	20.2
1987	26.8	81.9	21.9
1988	32.0	84.9	27.2
1989	34.2	90.4	30.9
1990	35.1	94.4	33.1
1991	36.2	95.4	34.5
1992	38.3	95.1	36.5

1993	41.0	96.4	39.5
1994	43.0	96.5	41.5
1995	50.0	96.4	48.2
1996	59.0	96.2	56.0
1997	69.0	95.8	66.1
1998	80.0	95.3	76.2
1999	93.0	94.0	88.2
2000	111.0	94.2	104.6
2001	135.0	93.6	126.4
2002	157.0	92.9	145.0
2003	180.0	92.3	166.0

* HH in mil. Includes compressed digital channels which may not be available in non-cabled homes. © 1994 Paul Kagan Assoc., Inc. '64-'83 A.C. Nielsen: 1984-2003 PKA est.

Looking forward, channel capacity jumps dramatically as digital technology in the form of channel compression makes itself felt. The average cable subscriber could have a potential choice of 166 channels by 2003.

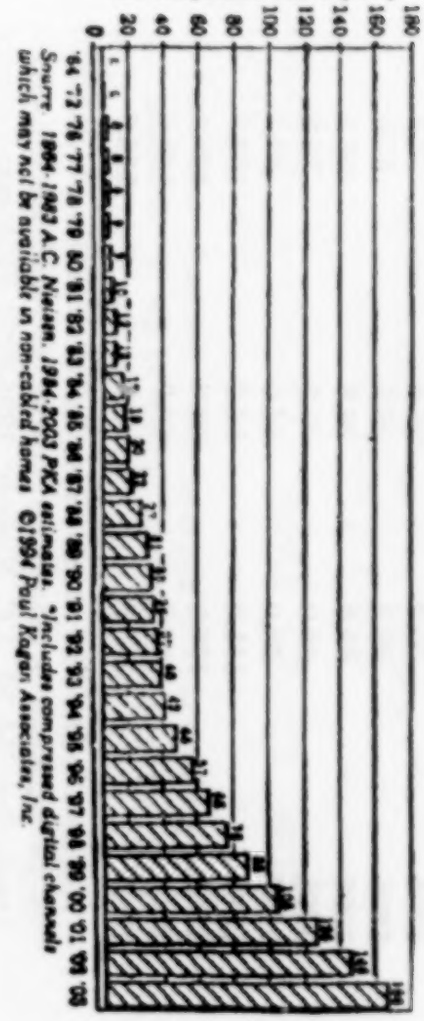
TV viewers without cable would remain confined to the current selection of a dozen channels or less if they're not connected to alternative delivery media such as DSS, which already offers 150 ch.

Again, the full complement of eight-score-and-six channels will go only to those homes equipped with digital converters capable of decoding them. As the choices mount, channel surfing could evolve from an annoyance to a necessary skill, although sophisticated onscreen menus and intelligent agents will make the many channels far easier to peruse.

Over time, the concept of "channel" could also evolve. Cable operators will likely use compression to simulate VOD rather than adopting the NVOD model.

Programming that may have been put on a 24-hour linear channel may migrate to VOD in the future. Many more channels could migrate to non-regulated revenue streams such as NVOD or VOD. Televised fare could include movies or television programs received on a subscription basis or through time-shifting.

AVERAGE NUMBER OF CHANNELS PER HOME



THE KAGAN MEDIA INDEX/
May 16, 1995/p. 8 of 16

			04/29/94	04/28/95	—Proj.— 04/30/96	—% Chg.— 94-95	95-96
1	U.S. TV homes	(mil.)	94.3	94.3	96.3	1.1%	1.0%
2	Homes passed by cable	(mil.)	90.9	91.9	92.7	1.1	0.9
3	Basic cable subscribers	(mil.)	57.7	59.2	60.5	2.6	2.1
4	Pay-cable subscription units	(mil.)	42.2	43.9	45.2	4.2	2.8
5	Expanded basic cable subscribers	(mil.)	27.4	28.4	29.4	3.0	3.3
6	Backyard dish subscribers	(mil.)	1.7	2.2	2.9	33.1	32.3
7	SMATV subscribers	(mil.)	0.9	0.9	0.9	(2.2)	0.0
8	Wireless cable subscribers	(mil.)	0.5	0.7	0.9	42.1	34.6
9	Addressable cable homes	(mil.)	21.8	25.3	29.5	16.1	16.9
10	Pay-per-view (PPV) marketed homes	(mil.)	21.3	24.9	29.3	16.7	17.5
11	PPV revenue (year-to-date)	(mil.)$	222.9	268.0	323.0	20.4	20.5
12	PPV revenue (latest 12 mo.)	(mil.)$	593.3	713.3	859.0	20.2	20.4
13	PPV revenue/cable home/mo.	$	0.86	1.00	1.10	17.2	17.9
14	VCR homes	(mil.)	81.8	85.5	88.2	4.4	3.2
15	Cassette rental turns (year-to-date)	(mil.)	1,293.3	1,351.0	1,390.3	4.5	2.9
16	Cassette rental turns (latest 12 mo.)	(mil.)	3,790.6	3,937.6	4,092.4	3.9	3.9
17	Cassette rentals/VCR home/mo.		3.8	3.8	3.9	(0.5)	0.7
18	Cassette rental rev. (year-to-date)	(mil.)$	3,129.8	3.350.0	3,531.4	7.1	5.4
			9,023.3	9,610.1	10,232.5	6.5	4.5
20	Avg. video cassette rental price	$	2.38	2.44	2.50	2.5	2.4
21	Cassette rental rev./VCR home/mo.	$	9.19	9.37	9.67	2.0	3.2
22	Cassette unit sales (year-to-date)	(mil.)	113.4	126.3	137.6	11.4	8.9
23	Cassette unit sales (latest 12 mo.)	(mil.)	316.1	353.1	390.2	11.7	10.5
24	Cassette unit sales/VCR home/mo.		0.3	0.3	0.4	7.0	7.2

			04/29/94	04/28/95	—Proj.— 04/30/96	—% Chg.— 94-95	95-96
25	Cassette sales rev. (year-to-date)	(mil.)$	1,669.4	1,900.8	2,107.8	13.9	10.9
26	Cassette sales rev. (latest 12 mo.)	(mil.)$	4,593.4	5,239.5	5,909.0	14.1	12.8
27	Avg. cassette retail price	$	14.53	14.84	15.14	2.1	2.1
28	Cassette sales revenue/VCR home/mo.	$	4.68	5.11	5.58	9.2	9.3
29	Total home video rev. (latest 12 mo.)	(mil.)$	13,616.7	14,849.6	16,141.5	9.1	8.7
30	Total home video rev./VCR home/mo.	$	13.87	14.48	15.25	4.4	6.3
* 31	Video shopping homes (24-hr. equiv.)	(mil.)	60.9	63.1	65.3	3.6	3.5
32	Video shopping rev. (year-to-date)	(mil.)$	946.0	1,107.0	1,317.0	17.0	19.0
33	Video shopping rev. (latest 12 mo.)	(mil.)$	2,591.3	2,999.0	3,531.0	15.7	17.7
34	Video shopping revenue per home/mo.	$	3.54	3.96	4.50	11.7	13.6
* 35	Cable operator rev. (year-to-date)	(mil.)$	7,557.2	8,208.8	8,879.3	8.8	8.2
36	Cable operator rev. (latest 12 mo.)	(mil.)$	22,030.4	23,323.2	25,296.8	1.3	6.2
37	Revenue/basic sub/mo.	$	33.24	32.81	34.83	(1.3)	6.2
* 38	Cable network fee rev. (year-to-date)	(mil.)$	665.7	740.7	792.3	8.0	7.0
39	Cable network fee rev. (latest 12 mo.)	(mil.)$	1,931.0	2,112.0	2,273.7	9.4	7.7
40	Cable network fee rev.-cable sub-mo.	$	2.79	2.97	3.13	6.6	5.4
* 41	Broadcast net. ad rev. (year-to-date)	(mil.)$	4,055.0	4,392.7	4,837.7	8.3	10.1
42	Broadcast net. ad rev. (latest 12 mo.)	(mil.)$	11,325.7	12,502.7	13,623.0	10.4	9.0
43	Spot TV ad rev. (year-to-date)	(mil.)$	2,956.7	3,163.7	3,416.7	7.0	8.0
44	Spot TV ad rev. (latest 12 mo.)	(mil.)$	8,166.7	9,077.0	9,744.0	11.1	7.3
45	Local TV ad rev. (year-to-date)	(mil.)$	2,212.4	3,438.7	3,713.7	7.0	8.0
46	Local TV ad rev. (latest 12 mo.)	(mil.)$	8,927.0	9,866.0	10,591.0	10.5	7.3
47	Cable network ad rev. (year-to-date)	(mil.)$	1,055.3	1,203.0	1,359.3	14.0	13.0
48	Cable network ad rev. (latest 12 mo.)	(mil.)$	2,888.0	3,313.7	3,785.3	14.7	13.6

©1995 Paul Kagan Associates, Inc. estimates. All rights reserved.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DISCOVERY COMMUNICATIONS, INC.
STATEMENT OF MATERIAL FACTS NOT IN DISPUTE

* * * *

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

AFFIDAVIT OF JOSEPH L. STERN

I, Joseph L. Stern, declare on the basis of my own personal knowledge and expertise in the area of broadcast transmission and reception as follows:

1. I am President of Stern Telecommunications Corporation (STC), a consulting engineering organization, incorporated in 1975, with offices at 928 Broadway, Suite 1001, New York, NY 10010.

2. I have extensive experience in matters relating to television signal transmission and reception, and have been actively engaged in the television industry from 1945 to the present. For the past 24 years, I have consulted for a broad spectrum of telecommunications clients, including both television broadcasters and cable system operators, on issues regarding broadcasting, satellite transmission, cable television and broadband networks.

3. From 1949 to 1971, I was employed by Columbia Broadcasting System (CBS). I held a variety of positions at CBS: Radio-frequency Engineer, Project Engineer for Radio-frequency Engneering, Senior Project Engineer for Radio-frequency Engineering, Manager of Radio-frequency Engineering, Director of Radio-frequency Engineering for the Network Division, Director of Engineering for the CBS Television Stations Division, and Vice-president of Engineering for the Television Stations Division.

4. While at CBS, I was responsible for the design, construction and operation of 14 television transmitter/

antenna installations, functioning as the Project Manager for 12 of those installations (Chicago, IL; Empire State Building, New York City; World Trade Center, New York City; Mount Wilson, CA; St. Louis, MO; Buenos Aires, Argentina; Caracas, La Guira, Barquisimeto and Maracaibo, Venezuela; Port-of-Spain, Trinidad; and Grenada) and as Antenna Assistant for two installations (the Chrysler Building, New York City; and Milwaukee, WI).

5. In my capacity as Vice President of Engineering for the CBS Television Stations Division, I was also responsible for monitoring the reception of CBS-transmitted signals in television households. I worked closely with manufacturers of receiving antennas, master antenna designers, and with antenna installers to ensure that viewers obtained the highest quality reception of CBS's television programs.

6. While working for CBS, I participated in the work of the Joint Technical Advisory Committee to the FCC (JTAC) and served on the panels of the Television Allocation Study Organization (TASO). JTAC was an industry committee formed in the mid-1940s in response to an FCC request for assistance in studying the utilization of Ultra High Frequencies for television. JTAC completed its work in 1950. TASO was an industry committee formed in 1956 in response to an FCC request for an investigation of the engineering factors affecting the allocation of frequencies to television broadcasting. TASO completed its work in 1960. As a member of TASO Panel 1, I was responsible for developing information regarding transmitting antennas, including their performance as measured in the field, and analysis of the cost trade-offs between transmitter power and antenna gain for achieving the same level of effective radiated power. As an alternate on TASO Panel 2, my responsibilities included gathering information on receiving antennas and assessing their ability to receive various frequency ranges.

7. My areas of expertise, based on approximately 50 years of experience in the broadcast industry, are broadcast transmission and antennas, transmitters and radio-frequency devices, amplifiers, and devices that include amplifiers. My curriculum vitae is attached as Exhibit 1.

TELEVISION SIGNAL TRANSMISSION

8. Television broadcasting, in basic terms, is the process by which television programs are electronically processed into radio-frequency signals, transmitted over the air as electromagnetic fields, and received by the viewer's receiving antenna.

9. More specifically, the process is as follows:

a. The Federal Communication Commission (FCC) assigns each television station a channel within a designated frequency band. The frequency bands are categorized as follows:

Frequency Band	Frequency Range	Channels
Low VHF	54 to 88 mHz *	2-6
High VHF	174 to 216 mHz	7-13
UHF	470 to 890 mHz **	14-83

* "mHz" is an abbreviation for the term "mega Hertz," used to identify the frequency of an electrical waveform. One mega-Hertz is one million cycles per second.

** The frequencies between 806 and 890 mHz (channels 70 through 83), formerly allocated to television broadcasting, are now allocated to the land mobile service and, on a secondary basis, to television translators.

Each channel comprises a 6 mHz portion of the spectrum for the transmission of the combined picture and sound signals. For example, channel 2 occupies the spectrum between 54 and 60 mHz, and channel 14 occupies the spectrum between 470 and 476 mHz.

b. A television program, originating either live from studio cameras and microphones or from pre-recorded videotapes, is electronically processed into radio-frequency

signals within the transmitting television station's assigned frequency range.

c. The television station's transmitter then feeds the radio frequency energy to the station's transmitting antenna located at the transmitter site.

d. The transmitting antenna then creates an electromagnetic field that propagates the energy into the air space around it. The television signal is thereby radiated over the area of the community to which it is assigned by the FCC, generally in a radiation pattern designed to direct the energy toward populated areas.

e. The viewer's receiving antenna probes the air around it for the electromagnetic radiation field generated and radiated by the transmitting antenna and converts the electromagnetic field which it samples into voltages that are carried on a wire or cable and fed to the television receiver. Television receiving antennas are frequency sensitive. Their design determines: (1) which portion or portions of the television spectrum (channels) will be received; and (2) the quality of reception at a specified frequency. Receiving antennas may be designed to receive UHF-only signals, VHF-only signals, both UHF and VHF signals, or a single channel or group of channels in either the UHF or VHF band. Antennas designed for a single band of frequencies, such as UHF-only, are generally more sensitive and produce stronger output signals than antennas designed to receive the entirety of the VHF and UHF bands. Similarly, antennas designed for a single channel are generally more sensitive and produce stronger output signals than antennas designed to receive a multitude of signals.

f. The voltage created by the television receiving antenna contains analog representations of the transmitted picture and sound channels of all television channels received in the local area. (HDTV, which uses digital representations, is not yet available in the United States.)

These varying voltages are sent to the television receiver in the frequency bands of the original television transmissions. Then, when the viewer tunes the receiver to a particular television channel, the voltage within the frequency spectrum of that channel is delivered to the tuner portion of the television set. The tuner and associated circuitry in the television set process the signals and deliver the reconstituted picture and the sound to the picture tube, and to the loundspeaker.

10. The FCC designates: (a) the television channels to be used in the United States in order to maximize the number of stations operating without interference from one another; (b) the minimum signal level ("signal intensity" or "field strength"); and (c) the maximum effective radiated power that can be delivered by the combination of the station's transmitter and transmitting antenna.

11. The FCC Rules and Regulations specify two principal grades of service for each station, Grade A and Grade B. (A third one, "City Grade," which represents the highest signal strength, has fallen into disuse.) The service grade contours represent the outer limits of such service. Thus, viewers that are further inside a particular service area will receive a stronger signal than those closer to the contour line.

12. The specified signal intensity for each service grade contour varies by frequency band, based on a number of factors. Beginning in September 1956, TASO performed studies analyzing those factors and, in June 1960, submitted its final reports to the FCC. TASO focused its studies on the following: (a) television signal propagation; (b) characteristics of transmitting and receiving antennas; and (c) radio-frequency voltages required to provide different levels of picture quality to viewers. My principal committee activities on the TASO panels related to transmitting antennas and receiving antennas.

13. Based on the extensive TASO studies and the work of the FCC Laboratories and the FCC staff, the FCC developed the following field-strength criteria for the two principal signal coverage contours, all defined in standard units of field strength (microvolts per meter or uV/M) and in corresponding logarithmic units expressing the ratio of the value of field strength to a reference value of one microvolt per meter (decibels above one microvolt or dBu):

Channels	Field Strength	
	Grade A	Grade B
2-6	2510 uV/M 68 dBu	224 uV/M 47 dBu
7-13	3550 uV/M 71 dBu	631 uV/M 56 dBu
14-69	5010 uV/M 74 dBu	1580 uV/M 64 dBu

14. The field-strength criteria for the two principal grades of service—Grade A and Grade B—offer optimum placement for operation of the transmitting facility to serve the community to which the channel has been assigned. The criteria for Grade A (identified by TASO as "Urban") ensures sufficient signal level in the local community so that either indoor antennas or simple outdoor antennas are sufficient for quality reception. The criteria for Grade B (identified by TASO as "Rural") ensures sufficient signal level in the local community so that an outdoor antenna is sufficient for quality reception. In general, the distance between the household and the broadcaster's transmitting tower location significantly affects the type of antenna that the viewer should choose for optimum reception.

15. In establishing the Grade A and Grade B service contours, the FCC took into account a number of factors, including, but not limited to: the power level at which a station is permitted to broadcast; the propagation,

interference, and reception quality findings of TASO; geographical/topographical characteristics of the United States; and weather patterns in various regions. Factors influencing the particular radius of coverage for the grades of service include: the gain characteristics of the transmitting antenna; the local topography; and the vertical and horizontal transmission pattern of the antenna employed by the station. However, it must be noted that field strength at a particular time and location is a variable. It varies from day to night. It varies with temperature. It varies under varying weather conditions. It varies from point to point within a 100 foot radius of a point that is being measured. In the "real world" these variables are recognized and thus, when measuring field strength, measurements are taken by traversing the point of measurement and taking multiple samples.

16. Because of the variables involved, the FCC-predicted field strengths are based on "50% of the time, 50% of the locations." This means that the predicted level of field strength is expected to be present 50% of the time at 50% of the locations for which such field strength is predicted.

17. The FCC-predicted field strengths within the Grade A and Grade B contours are based on the viewer's having a clear line of sight, but also take into account some bending of the transmitted signal. Obviously, if there is a blockage, such as a mountain in between the transmitting site and the receiving location, then the signal will not go through. However, the viewer behind the mountain may still receive the signal if, for example, the transmitted signal bounces from a higher mountain down to the viewer's location. Signals often bounce or reflect off natural and man-made obstructions and so may be picked up by particular viewers.

18. Based on my experience, as a generality, assuming relatively unobstructed terrain, the radius of Grade A coverage is between 30 and 45 miles, and the radius of

Grade B coverage is between 55 and 60 miles. By way of example, the Grade A and Grade B contours for station WCBS-TV in New York City (channel 2), as calculated using the FCC-prescribed methods, are shown in Exhibit 2 attached hereto. Grade A and Grade B coverage patterns for all commercial stations in the U.S. are published in the *Television and Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc. (1995 ed.).

19. At the same time that the FCC established the field-strength criteria, the FCC also established maximum effective radiated power (ERP) standards for each frequency band, in order to minimize the risk of interference with other stations broadcasting on the same frequency in neighboring localities. These standards are as follows:

Channels	Maximum Effected Radiated Power
2-6	100 kilowatts
7-13	316 kilowatts
14-69	5000 kilowatts

The FCC established these maximum power levels in conjunction with a nationwide television allocation plan. Exhibit 3 (attached hereto) contains coverage maps showing the Grade B contours for the states of Georgia, Illinois, and Iowa, as representative examples of how the FCC allocation plan provided for a diversity of signals to be transmitted throughout the United States.

TELEVISION RECEIVING ANTENNAS

20. In order to receive television signals off-the-air, whether it be directly or through the use of an A/B switch, some type of television receiving antenna is necessary. Antennas range in size and cost, depending on the performance for which they are designed.

21. According to Paul Kagan & Associates, a research group respected and relied upon by members of the television industry, there are approximately 94 million tele-

vision households in the United States today. Approximately 62%, or 58 million of these households subscribe to cable television for one or more of the televisions in the household. Thus, at least 36 million television households currently rely exclusively on a receiving antenna to view television off-the-air. Many cable households also rely on antennas for second or third television sets not connected to cable.

22. A wide variety of antennas are in use today. The three general types of antennas are: "master" antennas, "indoor" antennas and "outdoor" antennas.

23. Master antennas consist of a collection of high quality antennas mounted on the top of an apartment building or on a tower in a condominium complex, and connected to distribution amplifiers that feed the antenna signals to each dwelling unit in the building or complex. Master antennas are often used where, for reasons of convenience or aesthetics, it is impractical for each apartment or condominium dweller to install his or her own outdoor antenna.

24. Indoor antennas are usually small assemblies of metallic antenna elements that can be mounted on the top of the television receiver or on a nearby table. Separate designs are usually offered for the VHF band and for the UHF band. Indoor antennas for the VHF band are generally in the form of a V-shaped assembly of antenna elements commonly called "rabbit ears." Indoor antennas for the UHF band vary from a small loop of wire, about ten inches in diameter, to a pair of fan shaped antenna elements set in front of a reflecting wire screen. Indoor antennas are used where there is sufficient signal strength available at the television receiver location to receive a high quality picture, such that use of an outdoor antenna would be unnecessary. Generally, most households within the Grade A contour are able to view high quality off-the-air signals with an indoor antenna.

25. Outdoor antennas are generally mounted on a short tubing mast on the side of a dwelling or on a chimney. Generally, outdoor antennas enable viewers who are located within the Grade B contour—and in many cases just outside the B contour—to view high quality off-the-air signals. At greater distances outside the Grade B contour (*e.g.*, 60-100 miles from the transmitter), the outdoor antenna is often mounted on a high mast or tower (usually 30 to 60 feet off the ground) to improve reception.

26. Outdoor antennas may also be mounted within the attic of the house for convenience and/or aesthetic reasons. (Attic mounting is not workable if the roof is covered with metal or if aluminium foil insulation is used on the attic ceiling.) Certain compact outdoor antennas are well-suited for attic use because they have a flat profile, with permits attic mounting where there is little headroom.

27. Since 1960, significant improvements have been made in the design of receiving antennas and in the sensitivity of television receiver tuners. Among the most significant antenna improvements are (a) improvements in outdoor antenna efficiency (called "sensitivity" or "gain"); and (b) the availability of highly effective amplified antennas for indoor use at modest cost.

28. The improvements in outdoor antenna sensivity or "gain" stem primarily from two factors. The first is the use of the "log periodic" design for household receiving antennas, which provides a more evenly distributed gain characteristic than earlier designs, thereby improving reception on all channels. The second factor is the introduction of improved low-loss transformers built into modern antennas. The transformer permits the efficient transfer of energy from a 300-ohm antenna to a 75-ohm cable. The use of a 75-ohm shielded coaxial cable simplifies the wiring between the antenna and the television set, and at the same time prevents pickup of locally generated interfering signals.

29. The other significant improvement—amplification —means that the antenna is equipped with a small electronic assembly that amplifies the voltage received from the antenna. In effect, it boosts the signal received by the antenna. A viewer may purchase an amplifier separately from the antenna, or simply purchase an amplified antenna, in either case at a modest cost. A high-quality amplifier can be purchased from Radio Shack for as little as $20 to $30, and a high-quality amplified antenna can be purchased for approximately $50. In many cases, amplification permits the use of an indoor antenna where an outdoor antenna would otherwise have been required.

30. These improvements in the design and manufacturing of antennas apply to both VHF and UHF antennas, although the most significant improvement has been with UHF antennas because more was needed. As new stations enter the market, they are typically added in the UHF signal range, because the VHF channels are full. The increase in the number of UHF television stations over time resulted in a demand for better reception of those stations.

31. These improvements in antenna design and manufacturing have resulted in the weeding out of substandard antennas. Today three companies—Tandy Distributor Products, Channelmaster and Winegard—manufacture over 95 percent of the antennas sold in the United States.

32. In addition to the above-noted improvements in antenna design and manufacturing, there has been a significant reduction in the noise figure of TV set tuners—by five or six decibels—over the past 15 years. This has the effect of increasing the sensitivity of the TV set, thereby enabling the receiver to present a high quality picture, even with a relatively low signal input from the antenna. Many of these improvements have favored the once poorly performing UHF band of frequencies. As a result, TV receiver tuners now perform as well on UHF channels as they do on VHF channels.

33. Indoor antennas have increased in popularity in recent years. Sales of indoor antennas rose from 3,500,000 units in 1993 to 5,300,000 units in 1994, as reported by antenna manufacturers (Tandy, Channelmaster and Winegard) and retailers (Sears, Circuit City, The Wiz and others). Sales of outdoor antennas have also increased. Through an informal survey, I learned that antenna manufacturers and distributors attribute the increased sales of antennas to a number of factors, including:

(a) Replacement of old and less efficient antennas in order to deliver a stronger signal to larger-screen TV sets, to VCRs, and/or to second or third television sets not connected to cable.

(b) Installation of an antenna to complement the installation of DBS (Direct Broadcast Satellite) service, which delivers signals to the subscriber via satellite but does not deliver local broadcast signals. This requires a subscriber who desires to receive local off-the-air stations to do so by use of an antenna and an A/B switch.

(c) Installation of an antenna to complement the installation of MMDS (Multichannel Multipoint Distribution Service), sometimes referred to as "wireless cable" because it delivers multiple channels to the home at microwave frequencies. Because MMDS delivers few if any local broadcast signals, a subscriber who desires to receive local off-the-air stations must do so through the use of an antenna and an A/B switch.

34. Substantial additional improvements in indoor antenna design can be expected in the near future. The National Association of Broadcasters (NAB) recently announced that it has awarded a contract to MegaWave Corporation of Boylston, MA, to develop an "Improved Set-Top Antenna." The NAB noted that "more than 50 percent of all TV sets in the U.S. depend on set-top

antennas to receive TV programming. Therefore there is a large installed-base of TV sets that rely on over-the-air reception through some type of antenna." *See* Exhibit 4 (attached).

COST, AVAILABILITY AND INSTALLATION OF RECEIVING ANTENNAS

35. Television receiving antennas are available throughout the United States from retail outlets, department stores, discount appliance stores and hardware stores. Some of these national and/or regional sales outlets, including Sears, Circuit City, and The Wiz, will install the antennas they sell, while others recommend a local installer to perform the service. Some retailers such as "U-Do-It-Electronics" in Newton, Massachusetts, and Home Depot in a wide variety of locations, offer advice for self-installation, and on occasion will offer recommendations for installation services.

36. Installation of an indoor antenna is elementary. The viewer places the antenna on or near the television set and adjusts it to a position where reception is optimal.

37. Preparation and installation of an outdoor antenna is relatively simple, as well. The pre-installation process for an outdoor antenna is minimal. Modern television receiving antennas have been specifically designed with folded and hinged elements to simplify installation. The antennas are shipped completely assembled, with all long physical elements "folded" for packing and shipping. Generally, a receiving antenna can be removed from the packing box, "unfolded" and set out for installation in less than two minutes. UHF-only antennas are typically smaller and take even less time to unpack and prepare for installation. (See photographs on p. 102 of the Radio Shack catalog, attached as Exhibit 5). The installation itself is also relatively simple. The viewer may install an outdoor antenna on a thin tubing mast held by brackets

fastened to the side of a house, on a mast held by a clamp placed on a chimney, or on a mast fastened between a beam and a joist in the attic of the house. Once the antenna is mounted, a wire (either coaxial or twin-lead) is connected to the antenna and the television receiver. The antenna is then aligned to pick up the maximum signal from the television transmitting facility so that the viewer receives the desired television station(s) with the best quality.

38. After the antenna is installed, the viewer would only have to adjust its alignment if he or she wanted to watch more than one station off-the-air *and* those stations' signals were being transmitted from different points on the compass. In the majority of metropolitan areas, virtually all stations' transmitting antennas are located in the same general vicinity—the site that allows their signal to reach the greatest number of households. In the case where an indoor antenna must be adjusted, the viewer simply gets up, goes over to the antenna and adjusts it. In the case where an outdoor antenna must be aligned in different directions to receive different stations, the antenna is usually equipped with a rotor (electronic rotation scheme), which allows the viewer to adjust the direction of the antenna by a control switch or knob located by the television set. A rotor can be purchased at Radio Shack, for example, for $64.99 (Exhibit 5, p. 103).

39. A viewer typically determines what type of antenna is needed by speaking with antenna retailers and/or installers. The television service companies that sell and install television antennas have experienced installers who know what type of antenna is needed in a particular location. Manufacturers offer and electronics stores stock antennas of the type that are most generally useful in the area. Catalogs are another source of information. For example, current Radio Shack catalogs explain what type of antenna is appropriate for urban, suburban, fringe

(beyond the Grade B), and far fringe (even further out beyond the Grade B) locations (Exhibit 5, p. 102).

40. Radio Shack is one of the largest suppliers of television receiving antennas and accessories in the United States. Exhibit 5 contains copies of pages 102 through 107 of the 1995 Radio Shack catalog, showing the types and prices of the various antennas and accessories offered by Radio Shack. In surveying the price and availability of television receiving antennas nationwide, I found that many of the antennas and accessories offered by Radio Shack, and those of similar design and quality, are offered by other retail outlets for approximately the same prices.

41. In my experience, when consumers do not wish to self-install their antennas, they purchase an "installed antenna" from the retailer/installer, that is, an antenna with all of the cable, connectors, masts, mounts and whatever else is necessary to receive the best quality signal available at that location. I am aware of no publicly available information concerning the cost of installing various types of outdoor antennas throughout the United States, and a nationwide survey of such costs would be prohibitively expensive and time-consuming if it could be accomplished. I therefore undertook an informal survey whose results I believe to be representative of the likely range of such costs. I surveyed retailers of television sets in New York, New Jersey, Connecticut, Massachusetts, Virginia and Florida to find out the approximate cost of antenna installation. The prices for installing an antenna similar to the ones described above ranged between $50 and $150. The service departments of large outlets like Sears, Circuit City and The Wiz were at the high end of the scale; local installers in Needham and Newton, Massachusetts and Sarasota, Florida were at the low end of the scale.

42. For indoor reception, the consumer has a variety of antennas to choose from. Page 104 of the Radio Shack catalog (Exhibit 5) demonstrates the types and prices

of indoor antennas offered by Radio Shack. Based on my personal experience with indoor antenna evaluation while working for CBS and as a TASO member, I recommend the use of the UHF double bow-tie, listed as Model 15-623 in the catalog and priced at $15.99, for reception of UHF stations. I believe that this type of antenna would serve well to receive off-the-air television signals within the Grade A contour of television stations.

43. Page 104 of the Radio Shack catalog (Exhibit 5) contains other indoor antennas that offer different features, such as an amplifier to boost the signal level. The catalog lists these amplified antennas at $49.99 and $59.99. A separate amplifier, not sold in conjunction with an antenna, identified as Model 15-1104, is priced at $19.99.

44. Page 103 of the Radio Shack catalog (Exhibit 5) shows a "compact attic or outdoor antenna," model 15-2159, listed at $39.99. Based on my experience with the design of antennas, I believe that this antenna would perform in substantially the same manner as the model VU-75XR outdoor antenna listed on page 102 of the catalog, offered for use 50 miles from a UHF station. The only major feature difference between the two models is that the compact attic model has a flat profile, which permits attic mounting where there is little headroom.

45. Page 103 of the Radio Shack catalog (Exhibit 5) shows three examples of UHF-only outdoor television antennas. It is my opinion that Model 15-2160, listed at a price of $19.99, would serve very well to receive UHF signals within a station's Grade B contour.[1]

---

[1] This opinion is based on my experience with television reception, in particular as manager of a project designed to improve reception of WXIX, Channel 19 in Milwaukee, Wisconsin. This project involved recommending UHF receiving antennas for purchase by consumers, as well as dealer/installer education. I was also a consultant on a similar project in Hartford, Connecticut.

46. Page 103 of the Radio Shack catalog (Exhibit 5) describes a "multi-use amplified omnidirectional" antenna, Model 15-1618, for $99.99. This unusually shaped antenna, manufactured by Tandy Distributor Products and marketed by Radio Shack and other outlets, is further described in Exhibit 6. In conducting an informal survey of representatives at Circuit City and Radio Shack, I learned that householders have purchased this model for installation in their attic or for their rooftop because of its unobtrusive design. In my experience, I have found that it is a useful antenna for mobile vehicles or boats with televisions, and also for householders who desire a more aesthetic, less obtrusive antenna either for attic or rooftop mounting. The antenna has a built in electronic rotation system that permits remote control of the antenna's alignment.

47. Page 107 of the Radio Shack catalog (Exhibit 5) shows a "high isolation" A/B switch, Model 15-1249, for use in connecting a television antenna to a receiver being served by cable television, MMDS and/or DBS. Its listed price is $6.99.

48. Based on the catalog prices of antennas and my informal study of installation costs, it is my opinion that an outdoor UHF television receiving antenna, installed for reception within a station's Grade B contour, can be purchased and installed by someone other than the householder for between $70 and $170 (based on use of the Radio Shack Model 15-2160 antenna, priced at $19.99 or comparable model and price). It is my opinion that a combination VHF/UHF antenna can be purchased and installed by someone other than the householder for between $90 and $190 (based on use of a Radio Shack Model 15-2152 antenna, priced at $39.99 or a comparable model and price). It is also my opinion that the installation of an external A/B switch would add approximately $10 to the "installed antenna" costs described above.

CONCLUSIONS

49. High quality broadcast television signals are available to all television households located within the Grade A and Grade B contours of VHF and UHF television stations that are not blocked by obstructions (such as mountains or adjacent tall buildings), and even then, reflected signals may be available to those households.

50. A television receiving antenna is always required in order to receive off-the-air television signals. This is true in television households that do not subscribe to cable, and is equally true in television households that subscribe to cable, MMDS, or DBS and use an A/B switch to receive broadcast signals not carried by those service providers.

51. Approximately 36 million U.S. television households do not subscribe to cable, and thus are now using receiving antennas to receive off-the-air television signals.

52. VHF and UHF television signals may be received within the Grade A and Grade B contours of a station using any one of a number of different types of antennas. The type of antenna used depends primarily on the location of the television household relative to the television transmitting facility.

53. If a cable television subscriber wishes to view an off-the-air television station that is not carried on cable and is otherwise capable of being received in the subscriber location, either an indoor or outdoor antenna can be installed to permit this viewing. The antenna leads can be connected either to an A/B switch, or in cases where the receiver has a separate UHF input, directly to the UHF input, without an A/B switch.

54. It is my estimate that the cost of an indoor TV antenna for use within most parts of the Grade A contour and an A/B switch (where needed), all installed by the householder, will range between $25 and $50.

55. It is my estimate that the costs of an outdoor UHF TV antenna for use within the Grade B contour and an A/B switch (where needed), including installation by the antenna seller or an independent installer, will range between $80 and $180.

56. It is my estimate that the cost of an outdoor VHF/UHF TV antenna for use within the Grade B contour and an A/B switch (where needed), including installation by the antenna seller or an independent installer, will range between $100 and $200.

I declare under the penalty of perjury that the foregoing is true and correct. Executed on May 23, 1995.

May 23, 1995

/s/ Joseph L. Stern
JOSEPH L. STERN

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF STANLEY M. BESEN ON BEHALF OF PLAINTIFFS TURNER BROADCASTING SYSTEM, INC., *ET AL.*

I. Introduction

My name is Stanley M. Besen. I am Vice President, Charles River Associates (CRA), 1001 Pennsylvania Avenue, N.W., Suite 750 North, Washington, DC, 20004. I have been engaged in research on the economics and regulation of the telecommunications industry for more than twenty years, concentrating on those industry structures and practices that promote or inhibit competition. Much of this research has focused on the broadcast and cable television industries, as well as the relationships between them. I have published numerous articles and a book on these subjects.

I have served as a Brookings Economic Policy Fellow, Office of Telecommunications Policy, Executive Office of the President (1971-1972); as Co-Director, Network Inquiry Special Staff, Federal Communications Commission (1978-1980); and as a member of the Office of Technology Assessment Advisory Panel on Communications Systems for an Information Age (1986-1988). I am currently a member of the editorial boards of *Information Economics and Policy and Economics of Innovation and New Technology* and was formerly Coeditor of the *RAND Journal of Economics*.

I have testified on several occasions before various committees of the U.S. Congress on the regulation of the

broadcast and cable television industries. I have also offered testimony as an expert witness in proceedings before the Federal Communications Commission, the courts, and elsewhere. I have consulted for various trade associations and firms in these industries, and have submitted numerous statements on behalf of these entities in FCC proceedings.

I was previously the Allyn R. and Gladys M. Cline Professor of Economics and Finance at Rice University; the Visiting Henley Professor of Law and Business at Columbia University; Visiting Professor of Law and Economics at the Georgetown University Law Center; and a Senior Economist at the RAND Corporation. I received my Ph.D. in Economics from Yale University in 1964. My curriculum vitae is appended to this testimony as Attachment A.

Summary of Conclusions

I have been asked by counsel for plaintiffs in this matter to conduct an economic analysis to determine whether the system of local broadcasting would be jeopardized in the absence of must carry rules and whether Congress could reasonably have concluded, on the basis of the evidence available to it when it enacted the Cable Act of 1992, that this would be the case. In addition to some of the supplemental evidence supplied by the Defendants in this action, Congress had available to it, and apparently relied on, a study of cable carriage of broadcast stations that had been conducted by the Federal Communications Commission in 1988, which indicated that certain local broadcast stations were not carried by cable systems during a period when must carry rules were not in effect. Moreover, Congress expressed concern that the growth in the use of advertiser support by cable television would create incentives for cable systems to deny carriage to local broadcast stations in order to reduce the competition faced by cable systems in the sale of advertising. Finally, Congress expressed concern that

vertical integration between cable systems and cable program services would create incentives for cable systems to deny carriage to unaffiliated programmers, including local broadcasters.

In carrying out my analysis, I specifically addressed the following issues:

- To what extent were local television broadcast stations carried by cable operators in the absence of must carry rules?
- Which types of local stations did cable systems choose not to carry in the absence of must carry rules?
- Is it likely that cable operators' decisions as to whether to carry local television broadcast stations were motivated by an intent to exclude competing sellers of local advertising or unaffiliated programmers?
- What is the financial health of the television broadcast industry?

During the course of my analysis, I examined the statute and relevant portions of the legislative record and the claims of harm by defendants in this action, and undertook an independent analysis of pertinent data on station carriage and broadcast industry health. I also reviewed the reports and depositions of Defendants' economics experts.

I have reached the following conclusions. First, defining which stations are "local," to identify which local stations would be carried by cable systems in the absence of must carry rules, is not a straightforward task. For example, if local stations are those in a particular Area of Dominant Influence ("ADI"), the definition may be too broad, since it would include some stations very distant from the homes passed by the cable system. At the

same time, the definition may be too narrow if it excludes stations in an adjacent ADI that are regarded as local by subscribers to the system.

The definition of "local" I use recognizes that, although the ADI stations account for the plurality of the viewing in each ADI county, ADI stations that are distant from a cable system are less likely to be considered local to the homes passed by that system than are nearer stations. Specifically, I have defined stations as local if they are in the same ADI as, and within 50 miles of, the cable system. However, even this definition fails to account for the carriage of what one would reasonably consider as local stations that are in ADIs different from that of the cable system. I also performed calculations using the statutory definition of local and obtain essentially the same results as those obtained using my preferred definition.

Second, based on the definition I have used, an analysis of the extent to which sampled cable operators carried broadcast stations in the absence of must carry rules indicates the following:

- Ninety percent of all local stations with any reportable ratings in non-cable households were carried by the cable systems in the sample.
- The typical subscriber was served by a system that carried 99 percent of local ABC, NBC, and CBS affiliates, 98 percent of local Fox affiliates, 98 percent of local VHF independents, 61 percent of local UHF independents, and 78 percent of local non-commercial stations. Furthermore, the typical subscriber's system carried 98 percent of all local broadcast stations that had at least two percent of the non-cable viewing audience.
- More importantly, the local stations available to cable subscribers are those that account for virtually all viewing in non-cable households. The typical cable subscriber had access to those local stations accounting for 98 percent of the viewership of all local stations by non-cable households. Moreover, many local stations that had no, or very small, reportable ratings were also carried.

- Carriage decisions were unaffected by the number of ad-insertable program services carried by a cable system or by any ownership links between the system and cable program services.

These results are consistent with the findings of a 1988 NCTA carriage survey and a 1991 Federal Trade Commission Staff analysis, both of which were available to the Congress in 1992. The 1988 NCTA survey found that virtually all of those stations whose carriage would have been required by the previous set of must carry rules were, in fact, carried voluntarily in the absence of such rules. NCTA correctly observed that the Commission's report focused only on the number of instances of stations that were not carried and ignored the vastly larger number of stations that were.

The FTC Staff analyzed the data from the 1988 FCC survey of carriage behavior and found that most local broadcast stations were being carried by cable systems in the absence of must carry rules. The FTC Staff also quantified the extent to which anyone actually watched the broadcast stations that were not carried by cable systems. In effect, the FTC Staff conducted the analysis the FCC failed to conduct. The Staff found that the stations that were least likely to be carried in the absence of must carry rules were those with low ratings, those that were located relatively far from the headend of the cable system, and those that duplicated the programming of a station that was already being carried. Thus, the FTC Staff concluded that the carriage choices of cable operators were not motivated by anticompetitive considerations, and that requiring systems to carry all local broadcast signals would harm consumer interests. My

analysis of cable system carriage of broadcast stations at a later point in time confirms these conclusions.

Third, the record indicates that a very high percentage of broadcast stations did not elect must carry status and chose, instead, to demand payments from cable systems for the right to retransmit their signals. This behavior indicates that these stations believed not only that they would be willingly carried by cable operators but also that operators would in fact be willing to pay for the right to carry them. Clearly, these stations would not be harmed by the absence of must carry rules.

These conclusions about carriage behavior are completely at odds with the allegations of the Government and the broadcasters that the failure of cable systems to carry some local broadcast stations is evidence of anticompetitive exclusion by cable systems to improve their position in the advertising market. Cable systems could not have been anticompetitively excluding local broadcast stations to increase advertising revenues because, even in the absence of must carry rules, the stations that accounted for virtually all viewing were carried by cable operators. Since stations with larger viewing will obtain larger advertising revenues, these stations undoubtedly also accounted for almost all local broadcast advertising revenues. As a result, the observed carriage behavior of cable operators could not have been motivated by a desire to increase their revenues in the advertising market.

The inconsistency between the allegations of the Government and the broadcasters that cable operators will exclude broadcast stations in order to enhance their sales of advertising, on the one hand, and the facts of broadcast station carriage, on the other, can be ascribed to two factors. The first is that cable systems would have to compete with other, non-excluded, broadcast stations for any audience lost by an excluded station. Thus, the gains in the advertising market from exclusion would be limited.

The other factor is the reduction in subscriber revenues that cable operators would experience if they failed to offer to their subscribers the signals of highly valued local broadcasters. Clearly, cable operators cannot fail to carry the signals of the major network affiliates and those of the major independents without a significant loss in subscriber revenues, and apparently the same is also true for many other stations with much smaller audience shares. Indeed, cable operators have already begun to emphasize their carriage of local broadcast stations in distinguishing themselves from, and competing against, the new direct broadcast satellite services (DBS) which cannot provide to their subscribers the array of popular local television stations available on cable.

Since the gains from exclusion are limited, and the losses in subscriber revenues are potentially quite large, it is not surprising that, even in the absence of must carry rules, cable operators carried those local broadcast stations that together accounted for almost all local viewing, and many other stations as well. There is no substantial evidence to support Congress' prediction that, in the absence of such rules, cable systems would decline to carry local broadcast stations in order to obtain additional advertising revenues.

Fourth, the claim that must carry rules are justified because cable systems would otherwise exclude local broadcast stations from their channel lineups to benefit their affiliated cable program services is unjustified. This incentive, if it exists, would apply to not just local broadcasters but also to cable networks in which the operator did not have an equity interest. More importantly, this justification is inconsistent with the evidence regarding cable carriage of local broadcast stations by cable systems in the absence of must carry rules. Equally significant, even if the claim were true, the must carry provisions of the Act are overly broad because they apply to all cable

operators, whether or not they are vertically integrated with a cable program service.

Fifth, in light of the fact that the carriage behavior of cable systems can be explained not by any anticompetitive motives but by their incentive to provide the package of services that their subscribers value most highly, it follows that must carry rules harm consumers. Forcing cable operators to carry broadcast stations that their subscribers value less than they do other program services harms cable subscribers by depriving them of the ability to obtain the package of programming they prefer. Systems for which all channels are currently utilized will be forced to drop valuable cable program services if they must accommodate additional broadcast stations. Systems with temporary excess capacity will incur channel activation costs and, in the longer run, will be unable to add new cable program services that are more highly valued by subscribers than some local broadcast stations that they are forced to carry.

Finally, if, in the absence of must carry rules, cable subscribers have access to those local stations that account for virtually all viewing by non-cable households, then the absence of such rules cannot possibly endanger the health of the broadcast system. Nonetheless, Defendants' experts assert that the carriage behavior of cable operators in the absence of must carry provisions cannot be used to project their future behavior because the incentives for non-carriage will increase as cable operators' local advertising revenues increase in importance. However, Defendants' experts have failed to describe other, more important trends that will encourage the carriage of local broadcast stations by cable operators.

One such trend is the growth of direct-to-home delivery of satellite signals using small "dishes," now a nascent multichannel competitor to cable operators. Because this new distribution system cannot offer subscribers popular

local broadcast stations, cable operators can use their carriage of these stations to distinguish their offerings to subscribers. Indeed, the United Paramount Network has made precisely this point in describing to cable operators the advantages of carrying UPN affiliates and some large cable operators have similarly begun to point out to their subscribers that the new satellite systems cannot provide local broadcast stations.

A perhaps more important, but longer-term, countervailing trend is the increase in channel capacity that will result from cable system upgrades and the use of signal compression. At present, where many cable systems have limited capacity, local broadcast stations will be carried only if they contribute more to the profits of the cable operator than do highly valuable cable program services. Where there is substantially more capacity in the future, local broadcasters may not have to displace cable program services in order to be carried so that they will have to meet a lower hurdle for cable operators to find it profitable to carry them.

Any speculation that the net effect of these trends is expected to harm the broadcasting industry is flatly contradicted by investor behavior. Over the past decade and a half, there has been a virtually unbroken string of annual increases in the number of operating stations, particularly UHF stations. Investors in these new broadcast stations presumably expect to earn at least a normal return on their investments. Otherwise, these investments would not have been made. The continuing investment in new broadcast stations indicates strongly-held investor expectations that the broadcast industry will continue to prosper. In addition, the recent entry and success of the Fox Television Network despite the absence of any must carry rules are a reflection of those expectations.

The growth in the number of broadcast stations means that television viewers now have more off-air choices avail-

able to them than they did a decade prior to the passage of the 1992 Cable Act. Between 1981 and 1992, no individual television market experienced a reduction in the number of commercial television stations and many markets experienced increases. During the same period, only three television markets experienced a reduction in the number of noncommercial stations, while many others experienced increases.

Moreover, the growth in the number of broadcast stations and the entry of the Fox Network occurred during a period of spectacular growth in the cable industry that followed the deregulation of cable services. Between 1981 and 1992, the proportion of households that subscribed to cable grew from 22 to about 60 percent, the number of nationally-distributed cable program services grew from 38 to 78, and the all-day viewing share obtained by cable services rose from 14 to 30 percent. These facts were known to the Congress when it adopted the Cable Act of 1992. If broadcast television could prosper and expand as much as it did despite this enormous growth of an important competitor, its future would not be threatened if the must carry rules were not upheld.

I conclude that the must carry rules are not needed to prevent cable systems from excluding broadcast stations from their channel lineups in order to enhance their advertising revenues. Any gains in advertising revenues realized from the pursuit of such a strategy would be more than offset by the losses in subscriber revenues that would be incurred if popular local broadcast stations were not carried. Moreover, the claims that cable operators would engage in such exclusionary behavior are inconsistent with the record of what they actually did when the must carry rules were not in effect. There is no evidence to indicate that this behavior will change in the future. Indeed, the trends that I have reviewed (including the advent of DBS and the longer-term increase in channel capacity) indicate that, on balance, cable

operators' incentives to carry local stations will increase over time.

The absence of must carry rules will not affect the availability of "free TV" to those homes that choose not to subscribe to cable. In the absence of the rules, cable operators will carry what viewers want to watch, including most local stations and those accounting for virtually all viewing. Must carry rules are not required to bring about this outcome. Consequently, there was no factual basis on which Congress could have reasonably concluded otherwise when it adopted the must carry provisions of the Cable Act of 1992.

II. The Businesses of Television Broadcasting and Cable Television

In order to understand the effects of the must carry rules, it is necessary to understand how the broadcast and cable television businesses function, and how their behavior and performance are influenced both by their economic structures and by the regulatory regimes under which they have operated. This section provides brief descriptions of the two industries as background for the more detailed analysis that follows.

A. The Television Broadcasting Industry

Although commercial television broadcasting began earlier, the origins of the modern television industry in the United States can be traced to the Federal Communications Commission's *Sixth Report and Order*,[1] which was issued in 1952. In that *Order*, the Commission promulgated a spectrum allocation plan for television that has influenced the structure and performance of the industry to this day. The plan contained four significant features.[2]

[1] 41 F.C.C. 148 (1952).

[2] In addition to the features discussed below, the plan also reserved a significant amount of spectrum for non-commercial television stations.

First, it assigned stations to relatively small geographic areas and explicitly rejected a plan advanced by the Dumont Television Network to provide television service using higher-powered but less numerous stations. Although the total number of stations in the United States was larger as a result of the spectrum allocation plan adopted by the Commission, many viewers were served by fewer stations than under the Dumont plan.

Second, a larger number of stations were generally assigned to large markets than to small ones,[3] but, even in the largest markets the number of assignments was not very great. This reflected both the limited amount of spectrum allocated to television broadcasting and the fact that providing assignments to small markets meant that those assignments were unavailable to larger ones.

Third, under the plan, both the Very High Frequency (VHF) and Ultra High Frequency (UHF) bands would be used for television broadcasting. In particular, the FCC explicitly rejected a proposal to move all television stations to the UHF band, which would have had the effect of requiring more than 100 VHF stations to be relocated in the frequency spectrum.

Finally, the plan assigned both VHF and UHF stations to many markets, a policy known as intermixture. Although the Commission attempted to "deintermix" many markets in the years immediately following the adoption of the *Sixth Report and Order*, it largely abandoned this effort in the face of opposition from broadcasters who would have had to change spectrum assignments.

---

[3] Although the plan called for assignments of a larger number of stations to large markets than to small ones, this objective was not always attained. The reason was that potential interference constrained the assignments of channels where markets were in close proximity to one another. Thus, two large markets that were close together might each contain fewer assignments than a more geographically isolated smaller market.

The FCC's spectrum allocation plan had several immediate effects and some that have lasted until this day. First, because UHF stations delivered weaker signals than did stations operating in the VHF band, the earliest growth occurred among VHF stations, and many UHF allocations remained idle for a considerable period of time. Moreover, even where they operated, UHF stations were generally less successful than their VHF counterparts, attracting fewer viewers and generally being less profitable, according to data reported to the FCC by the broadcasting industry. A significant number of UHF stations failed during the 1950s and it was not until many years later that significant growth occurred among these stations.

Second, viewers in small markets generally received service from fewer broadcast stations than their counterparts in larger markets. Although most viewers had access to programs from the three major networks, many viewers did not receive service from any independent stations and many others received service from only a few.

Third, the combination of the relatively small number of stations in many markets and the fact that many markets had even fewer VHF assignments limited the number of broadcast networks that could operate profitably. Even after the maturation of the ABC network, there were only three broadcast networks for a long period of time.

Television networks provided a very efficient method of developing and distributing programming and selling advertising.[4] A network can invest in new program development, secure in the knowledge that most of its affiliates will carry the programs it develops.[5] In addition,

---

[4] For a discussion of the efficiencies that result from networking, see S. M. Besen, T. G. Krattenmaker, A. R. Metzger, and J. R. Woodbury, *Misregulating Television: Network Dominance and the FCC* (Chicago: University of Chicago Press, 1984), pp. 5-7.

[5] This does *not* mean that affiliates will carry any network program regardless of its quality or the financial reward from doing

national advertisers often find it efficient to purchase advertising in a single network "buy" rather than try to reach the same viewers by purchasing advertising spots on a sufficient number of individual stations to reach the entire nation. Networks can also benefit from national promotion of their programming. Finally, a network could profitably obtain the ability to continuously interconnect its affiliated stations and thus have lower costs of distribution than syndicators who distributed their programs on a station-by-station basis.

Stations that were able to obtain network affiliations were more profitable than were stations that were forced to operate as independents. Network affiliates benefited from the availability of high-quality network programs, from the sale of national advertising by the network with which they were affiliated, and from low interconnection costs because the networks were forced to share these efficiencies in order to have their programs carried.[6] Because VHF stations were the most attrictive affiliates, they were often the beneficiaries of these efficiencies. At the end of the 1970s, the commercial television broadcasting industry consisted of 3 networks offering national coverage through about 600 affiliates and about 150 independent stations, many of which were UHF stations that operated on the margins of the industry. With only limited exceptions, commercial broadcast television was network television.

Since that time, the number of comercial stations has grown to over 1,100, about a 50 percent increase. Most of this growth has taken place in the number of independent UHF stations. In addition, a significant new net-

so, or that networks can coerce affiliates to carry programs. Rather, it means that the networks can develop programs that affiliates will find attractive and can provide financial incentives to encourage their carriage.

[6] This took the form both of reserving advertising spots within and adjacent to network programs for sale by affiliates and of the payment of compensation when affiliates carried network programs.

work, Fox, has come into existence. There are now about 700 network affiliates, including Fox affiliates, and about 400 independent stations.[7]

One additional feature of the television broadcasting industry that is critical to understanding its performance is how broadcast television, including both networks and individual stations, receives its revenues. Unlike most products, which are sold directly to final consumers, in the broadcast television industry viewers are inputs in the production of the products that broadcasters sell—viewer exposures. These exposures are produced by providing programs that are attractive to viewers and, in turn, these exposures are sold to advertisers who are the sources of the revenues that support the production of programming.[8]

When programs are produced locally, or syndicated on a station-by-station basis, advertising revenues are usually retained entirely by the station, which also bears the cost of program production or acquisition.[9] Advertising spots are sold to local advertisers, generally by employees of the station, and to national advertisers, generally by national spot representatives.

When a network affiliate airs a program, the network incurs the cost of program production and, in turn, retains

[7] Most Fox affiliates were formerly independent stations but some are former affiliates of the Big Three networks. Where switches to Fox have occurred, the Big Three have been forced to affiliate with stations that were previously independents.

[8] Newspapers and magazines share some of the characteristics of television broadcasting but they obtain some of their revenues from sales to readers in addition to the revenues they obtain from advertisers. Broadcast radio is, of course, similar to television in that virtually all of its revenues are obtained from advertisers.

[9] An exception is barter programming, whereby the syndicator reserves advertising spots from which it retains the revenues. In this case, the station may make no payemnt for the program, or its payment may be reduced by the fact that it shares advertising time with the syndicator.

a portion of the advertising spots on the program for its own sale. The revenues from these sales cover the cost of program production, network administration, promotion of network programs, and the payment of compensation to affiliated stations for carriage of the program. In addition, a number of advertising spots, either within or adjacent to the program, are reserved for sale by the affiliate.

The result of the virtually exclusive use of advertising revenues to support broadcast television is that the program choices of broadcast stations and networks are driven by the desire to attract the size and composition of audiences that are most desirable to advertisers, not by the desire to offer programming that viewers value most highly.

B. The Cable Television Industry

Cable television's ability to grow and achieve the degree of success it has can be explained, in large measure, by the fact that it could overcome many of the shortcomings of the commercial broadcast television system.[10] First, because it was not constrained by the amount of spectrum assigned to broadcasting, cable could offer a larger number of services to its subscribers than they could receive over the air. This was important in markets where the number of stations assigned under the FCC's spectrum allocation plan was small, but cable systems also found that viewers were willing to pay for additional cable services even in markets where a significant number of local stations were in operation.

Second, because cable delivered its services by wire rather than over-the-air, it could offer additional services without degradation of transmission quality. This contrasted with the situation in broadcast television where expansion after the early years was largely confined to the UHF band with its inferior signal quality. As a result, cable found it easier to provide additional services than did broadcasters.

[10] I say "could" because, for much of the history of cable, it operated under regulatory constraints urged on the Commission by the broadcast industry that made it impossible for the cable industry to fulfill its promise.

Third, when services were offered over cable, viewers in the smallest markets could receive the same level of service as that available to viewers in the largest markets. Indeed, the earliest cable systems were successful because they retransmitted the signals of "distant" broadcast stations to viewers in areas without broadcast service, or provided additional service to viewers in markets in which the number of over-the-air signals was limited. As a result, cable could reduce substantially the geographic disparities in television service that were inherent in the FCC's spectrum allocation plan.

Fourth, because the number of markets that could be reached by a given cable network, i.e., cable program service, was not technically limited, the number of such networks was not constrained by the availability of local distributors. Because each channel on a cable system was a potential "affiliate" of a cable network, new cable networks had the potential of ubiquitous coverage. This contrasts with the case of networks that were affiliated with broadcast stations, where new networks could not have an affiliate in many markets or, where they had an affiliate, would often be forced to affiliate with an inferior UHF station.

Fifth, as the number of new cable services proliferated, the tendency toward duplicative programming that characterizes broadcasting could be avoided. This, along with the fact that direct viewer payments permit small but intense demands to be satisfied, explains the development of specialized cable offerings, including all-news, all-weather, all-sports, and all-music services.

Finally, because cable was not limited to advertiser support, it could offer program services that attracted rela-

tively small numbers of viewers who were willing to pay significant amounts to receive those services.[11] Indeed, during most of its early history, virtually all of the revenues of cable networks and cable systems came from direct viewer payments. Some cable networks were combined and offered as parts of "tiers" for a single monthly fee. Other, so-called "premium," services were offered on an à la carte basis. Finally, some program services were produced for, or by, an individual local cable system. Cable operators added program services to their lineups so long as they increased revenues sufficiently, in the form either of more subscribers or higher subscription fees, to cover the incremental costs (including normal profits), both of constructing and activating additional channel capacity and making payments to cable program services to cover their costs of program development, acquisition, production, and distribution.[12]

In the past several years, the amount of advertising on cable networks and cable systems has reached levels where it can be considered a viable new source of revenues to support program production. However, no cable network approaches any of the major broadcast networks in terms of advertising sales, and cable systems are still predominantly dependent on direct subscriber payments to support the costs of system construction and operation and of program acquisition.[13] There are now in excess of 100

[11] This is not to say that all cable program services reached small numbers of viewers. Some new services might have been successful as mass audience broadcast networks if they had been able to obtain the same coverage as ABC, CBS, and NBC. But the presence of direct viewer payments undoubtedly was critical to the success of others.

[12] In the case of locally originated programming on cable, these revenues would be used to cover the program costs incurred by the cable system itself.

[13] Even more recently, cable systems have begun to receive commissions from the sales of merchandise on home shopping channels.

nationally distributed cable networks; in 1993, their advertising revenues accounted for less than one-quarter of the advertising revenues earned by the three major networks.[14] Advertising revenues earned by the 11,000 cable operators account for only 6 percent of the advertising revenues of the 1,100 local commercial broadcast stations and account for about 4 percent of total cable system revenues.[15]

It is important to emphasize that cable did not immediately deliver the benefits to consumers that are described above. The reason, as recounted in somewhat more detail below, is that cable was saddled by regulators with a series of obligations and constraints imposed at the urging of broadcasters that made it difficult, if not impossible, for cable to achieve its promise. The obligations raised cable system costs. The constraints limited the benefits cable systems could offer to their subscribers. For a long time, the result was to confine cable largely to areas with poor over-the-air television service where the value of the benefits that cable could offer to subscribers was sufficient to overcome these handicaps. At the same time, the effect of the government policies was to limit greatly the potential of the cable industry to serve additional subscribers and to offer new services to existing subscribers.

Some broadcast stations have also adopted the home shopping format and have benefited from this source of revenues.

[14] In 1993, cable networks earned $2.7 billion in advertising revenues while the three broadcast networks earned $10.9 billion. The source for the cable network revenues is National Cable Television Association, *Cable Television Developments* (April, 1994), p. 9-A. The source for the network revenues is *Broadcasting and Cable* (February 27, 1995), p. 56.

[15] In 1993, local cable advertising revenues were $984 million (Paul Kagan, Asso., *The Cable TV Financial Data Book, 1994*, p. 6) and local broadcast station advertising revenues were $16.2 billion (Television Bureau of Advertising, *Trends in Television*, May 1994, p. 11). Total operator revenues are from the Paul Kagan publication cited in the previous sentence, p. 6.

C. The Regulation of Cable Television

Early in the development of the cable television industry (i.e. in the late 1950s), television broadcasters began to complain that cable would threaten their existence unless system operators were severely constrained in what they could offer to the public. There were approximately 560,000 cable subscribers at this time, or about 1.3 percent of all households with television sets.[16] Beginning in the mid-1960s, broadcasters succeeded in having the FCC establish rules that greatly limited cable's offerings, at a time when there were 1,575,000 cable subscribers, or about 2.9 percent of all television households.[17] The stated rationale for this policy was that the growth of cable would threaten the viability of broadcast stations unless cable were tightly constrained.[18]

[16] For an early, perhaps the earliest, FCC proceeding in which such charges were considered, see *Inquiry into the Impact of Community Antenna Systems, TV Translators, TV "Satellite" Stations, and TV "Repeaters" on the Orderly Development of Television Broadcasting*, 26 FCC 403 (1959). There were 43,950,000 television households in 1959, according to *Historical Statistics of the United States: Colonial Times to 1970* (U.S. Department of Commerce, Bureau of the Census, Washington, DC, 1975), p. 796.

[17] *Second Report and Order*, 2 FCC 2d 725 (1966). The rules required the carriage of all local stations, that any imported signals not duplicate the programming of local stations, and a demonstration that the importation of distant signals would not adversely affect the economic condition of local broadcasters. There were 53,850,000 television households in 1966; *see idem.*

[18] Which stations are claimed to be most vulnerable and deserving of protection has always been a shifting target. In its eariest decisions, the FCC claimed to be helping primarily broadcasters in markets served by a small number of stations. Later, its attention shifted to stations in the top 100 markets, which were served by a larger number of stations. Eventually, the focus became UHF stations, and this continued despite claims (and, later, evidence) that these stations were actually helped by cable rather than being hurt by it. For a history of the shifts in the FCC's position on this matter, see S.M. Besen and R.W. Crandall, "The Deregulation of Cable Television," 44 *Law and Contemporary Problems* 77 (1981).

In 1971, the Commision adopted a comprehensive regulatory scheme for the still relatively small cable industry. The cable "compromise" that was adopted in 1971, which was in some ways less restrictive than the earlier policy, nonetheless limited both the number and types of distant signals that cable operators could retransmit and effectively eliminated cable's ability to offer any original, i.e., non-broadcast, programming.[19] Although some modest deregulation occurred subsequently, it was only after the *Home Box Office* decision, which overturned the Commission's anti-siphoning rules, that cable was allowed to offer significant amounts of non-broadcast programming.[20] At this time, there were about 11,900,000 cable subscribers, or about 16.7 percent of all television households.[21]

The FCC's subsequent decision in 1980 to eliminate its distant signal carriage rules [22] removed the last constraint

[19] *Cable Television Report and Order*, 36 FCC 2d 241 (1971). These rules are analyzed in S.M. Besen, "The Economics of the Cable Television 'Consensus' ", 17 *Journal of Law and Economics* 39 (1974). The anti-siphoning rules tightly constrained the programming that cable operators could offer in return for direct viewer payments. The rules also imposed a significant number of service *requirements* on cable, which had the effect of raising cable system costs. The consensus that led to the adoption of these rules also entailed an agreement that cable operators support a revision of the Copyright Act that would make these operators liable to copyright owners when they imported distant signals. I analyzed the provisions of the legislation that was subsequently adopted in S.M. Besen, W.G. Manning, and B.M. Mitchell, "Copyright Liability for Cable Television: Compulsory Licensing and the Coase Theorem," 21 *Journal of Law and Economics* 67 (1978).

[20] *Home Box Office v. FCC*, 567 F.2d 9 (1977).

[21] There were 71,200,000 television households in 1977 according to *Trends in Television*, Television Bureau of Advertising, New York, 1994, p.8.

[22] *Report and Order In the Matter of Cable Television Syndicated Exclusivity Rules, In the Matter of Inquiry Into the Economic Relationship Between Television Broadcasting and Cable Television*, 79 FCC 2nd 663 (1980).

on the services that cable could offer to its subscribers, and set the stage for the rapid growth in both the number of cable subscribers and the number of cable services that has taken place over the last decade and a half. In its decision, the Commission concluded that previous claims about the threat posed by cable to broadcasters had been exaggerated, and that the benefits to viewers from additional cable service offerings more than offset any harm that might be experienced by over-the-air broadcasters.

Given the various "prophecies of doom" that broadcasters have advanced over more than 30 years, one might have thought that the financial condition of the broadcast industry would weaken substantially after deregulation, as cable penetration grew to more than 60 percent, the number of national cable program services increased to over 125, and the share of prime time viewing obtained by cable services rose to 29 percent.[23] But this did not occur. Despite all these developments, broadcasting remains a profitable industry. The number of commercial broadcast stations has grown by more than 50 percent in the 15 years since cable was deregulated and began to offer a wide array of new programming services to subscribers—clear evidence that new broadcasters expect to operate profitably. During this period, all three major broadcast networks have continued to be very profitable and a major new network, Fox, has come into existence. One can only conclude that television broadcasting will remain financially healthy, whether or not the must carry rules are upheld.

---

[23] Cable penetration (as a percent of TV households) was 61.4% in 1993 according to *Trends in Television*, pp. 3, 5. The total number of nationally-distributed cable programming services as of 1994 was 125 according to *Cable Television Developments* (Spring 1995), p. 7. This does not include the growing number of regional cable networks or audio-only cable program services. The prime time viewing share of combined basic and pay cable networks for the 1993/94 season was 29 percent, according to A.C. Nielsen Corporate Communications (telephone conversation with Jack Loftus, January 1995).

III. Analysis of the Propensity of Cable Systems to Carry Local Broadcast Stations in the Absence of Must Carry Rules

A central question before the Court in this case is whether there was substantial evidence on which Congress could reasonably have relied to predict that the broadcast industry would be significantly harmed in the absence of any must carry provisions. The starting point in the process of responding to this question is to answer a logically prior question: How much difference would the must carry provisions make to whether broadcast stations obtain carriage on local cable systems? I answer this question by examining the carriage decisions of cable operators during a period without must carry rules, when cable systems' decisions about which stations to carry were unconstrained by regulation. In particular, I analyze the kinds of local broadcast stations carried by cable systems in the absence of must carry rules, and the factors that explain why certain stations are not carried.

The results are striking. In the absence of any must carry rules, the cable systems in the sample I analyzed chose to carry 90 percent of all local stations with *any* reportable *rating*, i.e., those that were viewed by at least one-tenth of one percent of non-cable households. Furthermore, the stations that were not carried were overwhelmingly those *without* significant viewing. Nonetheless, over 30 percent of those stations without any reportable rating *were* carried. Ninety-two percent of all local stations with at least a one-half of one percent *share* of local station viewing were carried, and 38 percent of those *not* meeting this threshold were also carried.

In addition, the typical subscriber's system carries 81 percent of all local broadcast stations, and 98 percent of all local stations having at least a 2 percent share of the non-cable household audience. Finally, and perhaps most significant, the local broadcast television stations carried

on the cable system serving a typical subscriber had a combined 98 percent share of all broadcast television viewing among non-cable households in their local markets.

In short, the results of my analysis of cable system carriage behavior are *not* consistent with the claims of broadcasters and the findings of Congress concerning the incentives of cable operators to engage in anticompetitive exclusion of broadcast stations. The evidence that I present here demonstrates that, even in the absence of the must carry provisions, cable operators have offered their subscribers those local stations that account for virtually all of the viewership of local television stations. Therefore, the absence of the rules would not jeopardize the financial health of the broadcasting system. The remainder of this section more fully describes my methodology and the results of the analysis.

A. Defining "Local"

The first step in the analysis is to determine which of the approximately 1,500 broadcast television stations are "local" for any particular cable system. The set of broadcast stations that would naturally be thought of as local to the subscribers of a particular cable system is very difficult to define using a predetermined set of rules. Relevant factors include the distances from nearby broadcast stations, the location of political boundaries, and various topographical features. This makes it difficult to craft a definition of local stations that will be appropriate for all cable systems.

The fact that regulations for other purposes or at other times have defined "local" differently is likely attributable, in part, to the difficulties of doing so. For example, prior to the *Century* decision, the must carry rules (which resulted from an agreement between broadcasters and cable operators) defined as local all stations within 50 miles of

the cable system. Under that agreement, being a local station was a necessary but not sufficient condition for must carry status. The station also had to be watched. In order to qualify for must carry, a station was required to have a viewership share of at least 2 percent and a "net weekly circulation" of at least 5 percent in non-cable households.[24] By contrast, the Federal Communications Commission uses a 35 mile rule for purposes of enforcing syndicated exclusivity in station-programmer contracts.

The problem of definition is clearly evident in the criteria used in the current must carry provisions.[25] Under these provisions, a *commercial* broadcast station is considered local with respcct to a particular cable system if the station: i) is located within the same television market ("Area of Dominant Influence" or "ADI") as the cable system [26]; ii) is not considered a distant signal for copyright purposes; and, iii) can deliver a signal of sufficient strength to the principal headend of the cable system.

The current must carry provisions define a *non-commercial* broadcast station to be local with respect to a particular cable system if the station: (i) is licensed to a community whose reference point is within 50 miles of the principal headend of the cable system; or (ii) has a Grade B service contour encompassing the principal head-

---

[24] Net Weekly Circulation is the estimated number of different television households viewing a particular stations at least once a week, Monday through Sunday, sign-on to sign-off. Warren Publishing, Inc. *Cable and Television Factbook* (1993), Stations Volume, p. A-14.

[25] 47 C.F.R. § 76.55.

[26] Areas of Dominant Influence are contiguous, non-overlapping geographic areas that define, according to Arbitron, television markets based on households' measurable television viewing patterns. Each county in the U.S. is assigned to one, and only one, ADI, based upon the stations accounting for the plurality of viewing in the county.

end of the cable system.[27] Thus, even within the current must carry provisions, there is no uniform definition of a "local" station.

One obvious problem with the statutory definition of "local" for commercial stations is that many cable systems may carry stations from a nearby ADI if those stations are regarded as local by their subscribers. After all, most cable systems will not be located at the center of an ADI. Similarly, the neighboring ADI stations may regard these cable subscribers as potential local viewers to be marketed to local advertisers.

Consider the example of the cable system serving Montgomery County, Maryland. The system is in the Washington, DC ADI, but parts of the system are located not far from the Baltimore, MD ADI.[28] (See Exhibit 1.) For this reason, and because the system is located in the same state as Baltimore, it is not surprising that the system carried four commercial stations from the Baltimore ADI in 1992, when the must carry rules were not in effect. Any definition of local that excluded these stations would understate the system's carriage of local stations.[29] In effect, the ADI definition of a local station gives this system no "credit" for its carriage of the Baltimore stations that are in fact regarded as local by many of the system's subscribers.

Indeed, of the eight off-air stations carried by the average cable system in my sample, approximately two are in an adjacent ADI. Despite the fact that carriage of these

[27] As I discuss below, my preferred definition of what cable subscribers perceive as a "local" signal contains elements of this definition.

[28] The Washington, DC ADI includes the District of Columbia and portions of Maryland and Virginia.

[29] Indeed, the definition of local that I use below, which starts from the definition in the 1992 Cable Act, is subject to just this type of understatement.

two off-air signals "supports" local broadcasting, the Cable Act's must carry provisions do not recognize that support. Thus, the effect of those provisions may well be to replace what are in fact local stations for cable subscribers with what the Act has arbitrarily defined to be "local" for those subscribers.

Other criteria for determining local stations are likely to cause different anomalies. For instance, a 50-mile rule would place an unreasonable burden on cable systems that happen to be situated within 50 miles of two different metropolitan areas, since those systems would have a very large number of stations that would be counted as local. For example, the Montgomery County system is within 50 miles of 20 stations, 7 in Baltimore, 8 in Washington, and 5 others scattered throughout Maryland and Northern Virginia.

In brief, no single definition of a local commercial (or noncommercial) station can provide a completely accurate measure of which "local" stations any particular system is carrying or (given the premises underlying the 1992 Cable Act) which "local" stations the system should be carrying. In conducting my analysis, therefore, I have used two alternative criteria for defining what are local stations to the subscribers of any particular cable system: (1) all stations in the same ADI as the cable system that are also within 50 miles of the principal headend of the cable system (my preferred definition), and (2) all commercial stations in the same ADI as the cable system and all non-commercial stations within 50 miles of the principal headend of the cable system (approximately the statutory definition).[30]

[30] There are three sources of minor differences between this definition and the statutory definition. First, I have not eliminated those stations within an ADI that fail to deliver an acceptable signal to the headend of a system within the ADI. Second, I have not excluded duplicate non-commercial stations. Third, I have not

I prefer the first definition because it takes into account that the plurality of viewing in the counties served by a cable system is of the stations in the ADI, and that stations located within the same ADI that are not proximate to the system's homes passed are not as likely to be regarded as "local" by subscribers as nearer stations. Thus, stations that are located more than 50 miles away from the cable system are likely to be viewed significantly less (other things equal) by the non-cable households passed by the cable system than are more proximate stations. Although this definition is not "perfect," compared to the alternatives it most closely reflects what viewers perceive as local.

One obvious flaw in this definition is the one exemplified in the Montgomery County, MD instance described above. Under the definition, the reported carriage of local stations by the Montgomery County cable system excludes the four Baltimore stations that it carried in 1992, although these stations could reasonably be thought of as local by many subscribers to the system.

A slightly different example involves the carriage by a Sarasota, FL system. Both stations within the Sarasota ADI were carried by the system in 1992. However, the system also carried 6 other stations located outside the ADI but within 50 miles of the system. Neither the statutory definition, nor my preferred definition, gives the system "credit" for the carriage of any of these stations that are almost certainly regarded as local to the subscribers of the cable system.

More generally, the number of instances in the sample of stations that are defined as "local" using my preferred definition is 1,580. The total number of stations actually carried (excluding non-local superstations) is 2,225, or 40 percent *more* than the total number of "local" stations

---

included non-commercial stations located more than 50 miles away but within whose Grade B contour the cable system is located.

using my definition. Thus, my preferred definition fails to credit many systems for the carriage of a substantial number of other off-air signals as does the statutory definition.

In the discussion below, I primarily report results based on my preferred definition. While the use of the statutory definition has a small effect on the specific results, it does not affect my ultimate conclusions.

B. The Sample of Cable Systems

In order to understand the carriage decisions made by cable operators in the absence of must carry regulations, and, thus, to understand the effects of those regulations, I analyzed the 1992 broadcast station channel lineups of a sample of 272 cable systems.[31] The cable systems were drawn from the same sample of 340 cable systems surveyed by J.N. Dertouzos and S.S. Wildman for a study they prepared in 1990.[32] I used 1992 carriage data rather than rely on either the 1988 NCTA survey or the 1988 FCC survey because these two surveys were undertaken at a date very close to the 1987 decision vacating the *Century* rules, so that the results obtained by NCTA and the FCC may have reflected the incomplete adjustment of cable operators to the absence of must carry rules. By

---

[31] The channel lineups for these cable systems were obtained from a survey conducted by Economists, Inc. in October 1992 on behalf of the NCTA for purposes unrelated to this litigation. While that survey was intended to answer different questions from those at issue here, the survey requested that each of the cable systems in the sample furnish a copy of its channel lineup. I used those channel lineups to determine which broadcast stations were being carried by the sampled cable systems during a period without must carry rules.

[32] See J.N. Dertouzos and S.S. Wildman, "Competitive Effects of Broadcast Signals on Cable," prepared for The National Cable Television Association, February 22, 1990. Apparently, the remaining 68 systems in the Dertouzos-Wildman sample did not respond to the Economists, Inc. survey.

1992, enough time had elapsed to be certain that the adjustment had been completed.

Dertouzos and Wildman used a stratified sample design based on stratification by system size (number of basic subscribers). Because the size distribution of cable systems is highly skewed toward systems with a small number of subscribers, a random sample of cable systems would not be representative of the situation faced by most subscribers. By oversampling the larger systems, one can obtain estimates that are more representative of the experience of the typical cable subscriber.

For each cable system in the sample, I compiled lists of all broadcast stations in the same ADI as the cable system and within 50 miles of the principal headend of the cable system. By matching the channel lineups of the systems in the sample with these lists, I determined which local stations were carried and which were not. As corroboration, I repeated these calculations for a second sample of cable systems compiled by Arthur D. Little (AD) on behalf of the plaintiffs.[33] A complete description of all data used in this analysis is presented in Attachment B.

C. The Viewership Data

Having defined which stations might reasonably be considered "local" to each cable system in the sample, I then determined, for each system, the extent to which

[33] See Arthur D. Little, *Availability of Channels in U.S. Cable TV Systems* and *Carriage of Must Carry TV Broadcast Stations*, both submitted in this proceeding, for a complete description of sample and survey methodology. Because of some differences in approach, the calculations reported below using the Arthur D. Little data may differ slightly from those reported by Arthur D. Little. A discussion of the differences can be found in Attachment C.

the local stations carried accounted for the viewership of all local stations. If cable systems tended to carry stations accounting for a large proportion of the viewership of all local stations, this fact would be at odds with the claims of broadcasters and the findings of Congress. In these circumstances, cable systems would be carrying those stations that account for most of the local advertising revenues; therefore, cable operators would be carrying those local stations that the broadcasters contend, and Congress found, would be *excluded* if cable operators made carriage decisions in order to gain an anticompetitive advantage in the sale of local advertising.

Broadcast television station viewership is measured by the Nielsen rating service. A station's *rating* is the percentage of all television households in the television market that view the station. Specifically, I have used Nielsen data on ratings among *non-cable* television households.[34] I have relied on those data rather than on data on total (cable and non-cable) viewership because both Congress and the Court expressed concern about the continued availability of over-the-air options to households choosing not to subscribe to cable. The over-the-air viewership patterns of all households will be different from those of non-cable households because of the differences in the number of viewing options. In particular, any given local station is likely to have a higher rating among non-cable households than among cable households. By focusing on non-cable households, I account for the possibility that there are some over-the-air stations that are popular with non-cable households but only lightly-watched by cable households.[35]

[34] Nielsen provides ratings data separately for different time periods during a day, referred to in the industry as dayparts. The data I have relied on are all-day ratings, defined as 7:00am to 1:00am, Monday through Friday.

[35] Some of the Defendants' experts inappropriately rely on "cumes" rather than shares to gauge the financial impact of cable carriage. See, for example, Report of Expert Witness Richard

My analysis focuses on the carriage decisions of cable systems as of October 1992, a period without must carry regulations. I relate cable carriage to station ratings, which provide (imperfect) measures of the value of broadcast programming to cable subscribers. For this purpose, one would normally consider the audience ratings of stations during 1992 (or earlier) to be relevant to these carriage decisions. In the context of this analysis, however, the fact that carriage decisions depend on ratings *and* that ratings may depend on carriage decisions raises the possibility that stations with low viewership had low viewership precisely because they were not carried. In order to deal with this possibility, I carried out my analysis using each station's November *1994* audience ratings. Most stations qualifying for must carry would presumably have been carried by then, and their 1994 ratings would better reflect their "true" viewership.[36]

D. Methodology and Results

Utilizing Nielsen data on each station's rating among non-cable households within each television market,[37] I

Feldman, Expert Report of Tom Meek, and Expert Report of David Schutz. "Cumes" measure the percentage of television households that watch any particular station for more than 5 minutes during a survey week. They are, in effect, a measure of the extent to which households are *capable* of receiving the signal of a broadcast station, not the *amount* of time they spend watching the station. Indeed, Nielsen describes a "cume" under the heading of "Reach."

[36] I have also carried out a statistical analysis using 1992 viewing shares that effectively controls for the impact of cable carriage on ratings. Those results, which are substantially the same as those reported here, are shown in Appendix C.

[37] When I submitted my report detailing my preliminary conclusions regarding the carriage behavior of cable systems, I did not have access to Nielsen viewing data for non-cable households. As a result, I relied instead on Nielsen viewing data for *all* households as reported in *Investing in Television*, Broadcast Investment Analysts, Inc., 1995, a publication that did not provide viewing data (shares) for non-cable households. Because any differences in

calculated for each system in the sample the percent of all local station viewership (i.e., ratings) accounted for by the local stations carried by the system.[38] An example is instructive. * * *

* * * *

This calculation was carried out for each cable system in the sample. The system-by-system results were then averaged in order to determine the percentage of viewing accounted for by local broadcast stations that are carried by the sampled systems.

An important technical issue is how to characterize overall carriage and viewership patterns. The experts of the Government and the broadcasters have expressed the view that noncarriage by systems with more subscribers is more "harmful" than noncarriage by systems with fewer subscribers.[39] This implies that the use of cable *system* averages to characterize viewership and carriage patterns could be misleading. This is so because the vast majority of cable systems have relatively few subscribers but the calculation of a system average gives the same weight to both small and large systems. And as a result, a system average may not accurately reflect the behavior of systems that serve most subscribers. As a result, I have calculated *subscriber-based* averages that place more weight on the behavior of cable systems with more subscribers. These averages characterize the behavior of the

results from using the new ratings data are small, my earlier conclusions are unaffected.

[38] Note that this is not a share of total viewing, since viewing of out-of-market stations and viewing of cable programming services are excluded.

[39] For example, Rohlfs finds that the impact on ratings is larger when a station is dropped by a larger system than by a smaller one. See Expert's Report of Jeffrey H. Rohlfs, paragraph 12. Dr. Noll makes the same point conceptually when discussing the significance of clustering. See Summary Expert Report (Roger C. Noll), paragraph 21.

typical subscriber's system rather than that of the typical system.[40]

The percent of all local broadcast station rating among non-cable households accounted for by the stations that were carried by the typical subscriber's system is about 97 percent for the statutory definition of local.[41] For my preferred definition, the combined ADI/50-mile criterion, *the local stations carried by the typical subscriber's cable system accounted for about 98 percent of total local television station viewership among non-cable households.*

I carried out a further analysis of the relationship between the audience ratings of a broadcast station and whether it is carried by first dividing stations into those that were carried and those that were not. I then divided stations into those that met some threshold level of viewership, and those that did not. For this purpose, I used two alternative thresholds: (i) a minimum reportable rating,[42] and (ii) a minimum of one-half of one percent of the total ratings of all local stations.[43]

---

[40] While the results cited throughout the text of this declaration refer to the subscriber-based average, I also report the system-based average in Attachment C.

[41] Duplicate Big-Three network affiliates and duplicate satellite/parent stations are counted only once. The sum of the audience shares of the duplicate affiliates is used for the affiliated station. (This occurs for only 10 cable systems in the sample when using the combined ADI/50-mile criterion.) In cases where the cable system is carrying a satellite rather than the parent station, the parent station's audience share is assigned to the satellite.

[42] A station has a minimum reportable rating if it is viewed by at least one-tenth of one percent of non-cable television households. While a station below this minimum will presumably have *some* viewers, its viewership is below any statistically meaningful level and is thus deemed non-reportable by Nielsen.

[43] Nielsen uses this cutoff in reporting viewing shares. Viewing shares are routinely reported in whole percentage points, and as a result any station with a viewing share of less than 0.5 percent is rounded to zero.

Exhibit 2 shows the relationship between station viewership and its carriage status using the minimum reportable rating threshold (and using my preferred definition of a local station).[44] Among the local stations that had *any* reportable rating, 90 percent were carried. Indeed, even 31 percent of the stations with *no* reportable ratings were carried.

Put differently, if one were to predict that all stations with a reportable rating were carried and that all stations without a reportable rating were not carried, this method would correctly predict the carriage status of 86 percent of the stations in the sample.[45]

Exhibit 3 shows the relationship between station viewership and its carriage status using the minimum 0.5 percent share threshold (again using my preferred definition of a local station). Among the local stations met the threshold, 92 percent were carried. Thirty-eight percent of the stations that did not meet the threshold were nevertheless carried.

Exhibit 4 reports the same information for a finer breakdown of station ratings. It shows that most of the rated stations that are *not* carried in fact have audience shares of less than 5 percent. Moreover, the percentage of stations carried increases with audience share. For example, stations with shares equal to one-half of 1 per-

---

[44] An analysis that "holds constant" other factors is provided below.

[45] In his deposition, Dr. Noll indicated that he expected that ". . . 25, 30 percent of the stations that are UHF independents would be significantly affected [in the absence of must carry] by being dropped." [Noll Deposition, p. 18] According to the data being used in my analysis, the least-viewed 29 percent of UHF independent television stations, many of which were carried in the absence of must carry, have no reportable ratings among non-cable homes. To the extent that these stations would be dropped in the absence of must carry, and to the extent that their viability or quality would be affected by non-carriage, the impact on non-cable viewers would be minimal.

cent or lower had a 38 percent probability of being carried; stations with shares between one-half of 1 percent and 2 percent had a 66 percent probability of being carried; stations with shares between 2 and 5 percent had an 81 percent probability of being carried; stations with shares between 5 and 10 percent had a 92 percent chance of being carried; and stations with shares in excess of 10 percent had a 98 percent chance of being carried.[46]

The results clearly indicate that (a) the local stations carried by cable systems account for almost all of the viewership of local stations, and, (b) cable systems even carry about a third of those stations that are not watched by many viewers. Thus, in terms of the stations that viewers watch, there is no question that the availability of "free TV" to non-cable households will not be threatened because of the absence of must carry provisions. Cable operators carry what non-cable households watch, and about a third of the stations that are only lightly watched.

In addition to these results, I also calculated the percentage of local stations that were carried irrespective of their viewing. Using my preferred definition, the typical cable subscriber had access to 81 percent of all local stations. The typical subscriber's system carried 99 percent of all local network affiliates; 98 percent of local Fox affiliates; 98 percent of the VHF independents; 61 percent of the UHF independents (excluding home shopping networks and other miscellaneous networks); and 78 percent of all non-commercial stations. See Attachment C for a complete statement of the methodology and results.

These carriage proportions likely understate the carriage proportions of stations that would qualify for must

[46] The cases in which stations with a relatively high audience share are not carried are often ones in which the cable system is situated near the boundary of two ADIs and is carrying a complement of stations from both ADIs. In these cases, even a station with a relatively high share may have a low marginal value to the system's subscribers.

carry under the current regulations because not all local stations qualify for must carry status. First, qualified stations must be able to deliver a sufficiently strong signal to the principal headend of the cable system. Second, a cable system's carriage obligations are limited by its channel capacity under the must carry regulations. Moreover, the calculated carriage proportions also tend to understate the overall extent to which cable systems carry broadcast stations because they fail to take into account the carriage of local stations from outside the ADI.

Since the analysis described earlier in this section indicates that most of those stations that are not carried in fact have very little viewership, I also calculated carriage proportions for the set of stations that, in addition to being local, had a minimum 2 percent share of ratings.[47] The typical subscriber's system carried 98 percent of the stations that met this criterion.

E. Corroboration of the Results

As a corroboration of the main results, the analyses presented in this section have also been repeated using the broadcast station channel lineups of the 402 cable systems surveyed by ADL on behalf of the plaintiffs in this proceeding. The results using the ADL sample are quite similar to the results reported above. For the ADL sample, stations that were carried accounted for 97 percent of local television broadcast viewing using the combined ADI/50-mile criterion. Of stations with a reportable rating, 89 percent were carried. Among stations with no reportable rating, 31 percent were carried.[48]

[47] Recall that the interim must carry rules that were struck down by the *Century* decision employed a similar viewership criterion to determine which stations qualified for must carry.

[48] Using the alternative threshold of a minimum 0.5 percent share of all local broadcast station ratings, 91 percent of stations meeting the threshold were carried and 38 percent of stations not meeting the threshold were carried.

There is also earlier corroboration for the results reported here. In 1988, the Federal Communications Commission released a report detailing the extent to which "local" broadcast stations were dropped by cable systems following the 1987 Court of Appeals ruling that the FCC's must carry rules were unconstitutional.[49] The report concluded that about 20 percent of all cable systems dropped, or denied carriage to, one or more stations that would have been entitled to must carry status under the more stringent pre-1985 must carry rules. The FCC's sample of 912 broadcast stations reported a total of 1,533 instances in which a cable system dropped or denied carriage to a station.[50]

There were two significant responses to the FCC survey. The National Cable Television Association (NCTA)[51] took the Commission to task for relying on the more stringent pre-1985 rules in determining which stations were entitled to must carry status for purposes of counting the number of instances in which a station was dropped from, or denied carriage by, a cable system. NCTA also conducted its own survey and based its analysis on the less stringent must carry rules adopted by the FCC in 1986. In addition, NCTA correctly observed that the Commission's report focused only on the number of instances of stations carried and ignored the much larger number of stations that were carried. NCTA found that 98 percent of those stations that would have

---

[49] Federal Communications Commission, *Cable System Broadcast Signal Carriage Survey Report* (Staff Report by the Policy and Rules Division, Mass Media Bureau, Federal Communications Commission), September 1, 1988.

[50] An "instance" of a drop is one cable system dropping one station. A broadcast station that was dropped by 5 cable systems would be recorded as 5 instances of a drop.

[51] National Cable Television Association, *Broadcast Station Carriage Survey*, September 1988.

qualified for must carry status under the interim rules were, in fact, carried.[52]

In 1991, the Federal Trade Commission Staff conducted its own analysis of the FCC data.[53] The Staff's observations foreshadowed the findings that I have already described. Relying on earlier reports by the General Accounting Office, the Staff noted that most off-air stations available to cable systems *were* in fact carried. In 1989, about 8 out of 9 available stations were carried.[54] Thus, the Staff correctly concluded that instances of non-carriage are relatively rare. After conducting a detailed analysis of those stations that the FCC found had not been carried by cable systems, the FTC Staff concluded that most of the instances of non-carriage were more likely explained by factors other than anticompetitive intent.

In the case of network affiliates, the FTC Staff concluded that instances of noncarriage were explained by the remoteness of the affiliate and program duplication. The FTC Staff also found that the systems that did not carry some network affiliates still offered their subscribers about four network affiliates. While instances of noncarriage of public television stations did not involve stations that were as geographically remote as the network affiliates that were not carried, the FTC staff observed that those systems that denied carriage to a public tele-

---

[52] Recall that the *Century* rules contained a minimum viewing standard. In that sense, the NCTA's results are similar to mine.

[53] *Reply Comments of the Staff of the Bureau of Economics and the San Francisco Regional Office of the Federal Trade Commission, In the Matter of Reexamination of the Effective Competition Standard for the Regulation of Cable Television Basic Service Rates, and Carriage of Television Broadcast Signals by Cable Television Systems*, Federal Communications Commission MM Docket No. 90-4, filed November 26, 1991.

[54] *Ibid.*, p. 10.

vision station continued to carry as many such stations as those systems that did not drop any stations.

Finally, the FTC Staff assessed the extent to which the commercial independent stations that were not carried were ones that were popular with viewers. In 46 percent of the instances, the stations that were not carried had no measurable ratings. Nearly 20 percent of the non-carriage instances were of stations that were ranked last or next-to-last in their markets, and another 6 percent were affiliates of home shopping networks. Thus, the FTC staff concluded that its analysis was

> . . . consistent with the view that in many instances non-carriage of independent commercial stations may have been motivated by a desire to replace less popular stations . . . [A] system's decision to drop a poorly-ranked station suggests that the station is both low-rated and low-valued . . . Under such circumstances, consumers' interests would not be well-served by requiring that these signals be carried.[55]

On the basis of its analyses of the FCC data, the FTC Staff observed that claims that cable systems were dropping local stations in order to amass market power in the sale of local advertising were simply unfounded.

> Denying carriage to stations that viewers seldom watch is not a promising anticompetitive strategy for [acquiring market power in the sale of local advertising].[56]

The FTC Staff also quantified the extent to which anyone actually watched the broadcast stations that were not carried by cable systems. In effect, the FTC Staff conducted the analysis the FCC failed to conduct. The FTC Staff study was available to Congress when it enacted the Cable Act of 1992.

---

[55] *Ibid.*, pp. 15-16.

[56] *Ibid.*, pp. 24-25.

F. Retransmission Consent

An additional corroboration of my analysis can be found in the behavior of broadcast stations themselves. The 1992 Cable Act permitted each commercial broadcast station to choose either to be a must carry station or to prohibit retransmission of its signal without prior approval from the station. Presumably, a commercial station would choose retransmission consent status only if it believed it would be carried by most cable systems even in the absence of must carry provisions. By opting for retransmission consent, the broadcast station also preserves the opportunity to charge the cable operator for carriage.

Thus, those stations that choose retransmission consent are likely to be highly valued by cable subscribers and therefore would be carried in the absence of the must carry provisions. Clearly, the absence of a must carry rule would not affect the carriage of these stations by cable systems, unless the asking price of the stations were too high. These are stations that believe they will be carried even if cable operators must pay to do so.

A majority of stations carried by cable systems did in fact choose retransmission consent status. According to a survey conducted by Arthur D. Little on behalf of the plaintiffs, 72 percent of all station carriage by cable systems and 62 percent of local commercial station carriage were accounted for by stations that had elected retransmission consent.[57] In addition, a press release issued by the National Association of Broadcasters regarding a survey it undertook reported that (among other things) more than 80 percent of all commercial stations chose retransmission consent for at least one cable system in their television market. Of those stations that elected retransmission consent, the typical broadcast station has chosen

---

[57] Arthur D. Little, Inc., "Carriage of Must-Carry TV Broadcast Stations" (April 21, 1995), p. 16.

to negotiate with nearly 66 percent of the cable systems within its television market.[58]

G. Regression Analysis

The previous analysis focused on ratings as the sole determinant of the probability that a station will be carried. I have also conducted a more extensive analysis of the probability that any particular station will be carried on a particular local cable system taking a variety of additional factors (such as system channel capacity and area demographics) into account. That analysis is described more completely in Attachment C, but two of the additional factors taken into account deserve discussion here. Broadcasters have asserted, and Congress has found, that cable operators deny carriage to local stations in order to reap additional profits on the sale of local cable advertising spots. Both have also claimed that ownership links between cable operators and cable programmers enhance these incentives to exclude broadcast stations. To ascertain whether there is any statistical support for these notions, I included in my analysis, variables that (1) measure the number of ad-insertable services carried by the system, and, (2) take into account the presence of operator-programmer relationships.

The results of this analysis are *inconsistent* with the view that cable systems exclude broadcast stations for anticompetitive reasons. Neither the number of locally ad-insertable cable channels on the cable system, nor the fact that an MSO has an ownership interest in a cable programming service, has a statistically significant effect on the probability of carriage. The results are completely *consistent* with the results, reported above, that stations with any viewership share have a high probability of being carried and those with no viewership share have about a one-third chance of being carried. These results confirm

[58] "More Than 90% of Affiliates Choose Retransmission Consent," *TV Today* (July 19, 1993), Bates Nos. 3008112-119.

the fact that the carriage decisions of cable operators are motivated not by any anticompetitive intent, but by a desire to provide cable subscribers with the services they value.

More fundamentally, those stations that are the biggest factors in the sale of local advertising—the highly viewed stations—are those that are most likely to be carried. The local advertising revenues of a station are highly correlated with its viewership and in the absence of any must carry provisions, cable systems carried those stations that account for virtually all of the viewership of local broadcast stations.[59] Thus, the local stations available to cable subscribers are identical to those that accounted for virtually all of the local broadcast advertising. These are precisely the set of stations one would expect cable operators *not* to carry if the anticompetitive incentives for excluding these station were truly significant. Pure and simple, these results contradict the claim that cable operators exclude stations to improve their position in the advertising market.[60]

[59] For an empirical demonstration of the strong positive relationship between viewership and advertising revenues, see F.M. Fisher, J.J. McGowan, and D.S. Evans, "The Audience-Revenue Relationship for Local Television Stations," *Bell Journal of Economics* (Autumn, 1980).

[60] The remaining variables in the regression include: the log of the channel capacity of the cable system, the log of the number of subscribers to the cable system, the log of the total number of stations in the market, the percent of the population that is Hispanic, the percent black, and median income. In a regression explaining carriage of *all* stations, none of these variables has statistically significant effects (at a 5 percent level of significance) on the probability of carriage, presumably due to the fact that audience shares explain most of the variation in carriage. However, in a similar regression model explaining the carriage of *UHF* stations, the log of the number of basic subscribers had a positive effect on the probability of a station being carried, and the log of the total number of stations in the market had a negative effect (both statistically significant at the 5 percent level).

H. Summary

Even in the absence of a must carry provision, the typical subscriber's cable system carried those local stations that are watched by non-cable households. Ninety percent of all stations with a reportable rating in non-cable households were carried by the sampled cable systems. For the typical subscriber's system, the carried stations accounted for 98 percent of total local broadcast station viewership. In addition, over 30 percent of those stations without any reportable ratings were nonetheless carried.

These results are obviously inconsistent with the claims of broadcasters and the findings of Congress that cable operators would deny carriage to local stations in order to gain an anticompetitive advantage in the sale of local advertising. The typical cable system carried those stations that together most viewers watched. These are the stations that account for most of the local broadcast station advertising revenues, so that they are precisely the kinds of stations broadcasters and Congress asserted would *not* be carried.

Because the stations carried by the typical subscriber's cable system in the absence of a must carry provision account for most of the local broadcast station advertising revenues, these carriage results imply that the financial health of the broadcast system cannot be jeopardized because of the absence of a must carry provision. These same results suggest that the availability of "free TV" to non-cable subscribers would not be affected by the absence of must carry provisions: The typical cable system in the sample carried those local stations that in the aggregate accounted for virtually all local television station viewing by non-cable households. There is no mystery as to why cable operators behaved this way. Cable operators continued to carry the significantly, and not-so-significantly, viewed stations because those stations are valuable to cable subscribers.

Thus, my own study shows unmistakably that the stations representing virtually all local broadcast viewing were being carried during the period in which must carry rules were not in effect. I conclude that there was no factual basis for Congress' predictions that these stations would not be carried in the absence of must carry provisions.

IV. The Determinants of Cable Operators Carriage Decisions

A. Introduction

The previous section demonstrated that, in the absence of any must carry provisions, the typical subscribers' system carries those local stations that account for virtually all viewing in non-cable households. This finding is inconsistent with Defendants' claims that cable operators will decline to carry local stations to foreclose competing sellers of local advertising or because vertically integrated systems favor their own affiliated program services. In this section, I describe the reasons for this inconsistency.

B. The Value of Broadcast Stations to Cable Subscribers

Cable systems will wish to add services to their channel lineups so long as the incremental revenue from doing so, primarily in the form of additional subscriber revenue but including additional advertising sales as well, exceeds the incremental cost.[61] Because there are costs of constructing and operating additional channels, cable systems generally will not find it profitable to carry all program services and, indeed, many cable program services are not carried by many systems.[62] In this regard, local broad-

[61] Recall that additional subscriber revenues are constrained by rate regulation.

[62] For systems with limited channel capacity, it may not be physically possible to carry all services for which incremental revenues

casters are no different from other sources of programming that must compete to be carried by cable operators.

I have already shown that the evidence about which broadcast stations were carried in the absence of must carry rules is dramatically at odds with the claim that broadcast stations are excluded for anticompetitive reasons. Despite this, the broadcast industry has claimed that competition with broadcast stations for local advertising revenues will influence a cable system's decision to carry a local broadcast station. For example, in the Congressional hearings on the 1992 must carry legislation, Thomas L. Goodgame, Chairman of the Television Board of the National Association of Broadcasters, testified that:

> If a cable operator believes he can increase profits by dropping (or not adding) an independent station and forcing viewers to switch to similar cable-only programming, then the independent station will be dropped or not added. This is especially true in competing for the advertising dollar. . . . In fact, the ability to sell ads on cable-only channels is perhaps the major incentive for cable operators to drop carriage of broadcasting signals, where they cannot sell advertising. And with local cable system advertising revenues expected to grow significantly in the next few years, that incentive can only grow larger.[63]

Indeed, the Congress made just such a finding when it enacted the Cable Act of 1992:

> Cable television systems and broadcast television stations increasingly compete for television advertising revenues. As the proportion of households subscribing to cable television increases, proportionately more advertising revenues will be reallocated from broadcast to cable television systems. A cable television system which carries the signal of a local television broadcaster is assisting the broadcaster to increase its viewership, and thereby attract additional advertising revenues that otherwise might be earned by the cable system operator. As a result, there is an economic incentive for cable systems to terminate the retransmission of the broadcast signal, refuse to carry new signals, or reposition a broadcast signal to a disadvantageous channel position. There is a substantial likelihood that absent the reimposition of such a requirement, additional local broadcast signals will be deleted, repositioned, or not carried.[64]

Statements such as these do not, however, provide support for the conclusion that cable operators will increasingly exclude local broadcasters for anticompetitive reasons. As a logical matter, the claims wholly ignore the obviously significant factor of lost subscriber revenues that a cable operator will experience if it deletes from its lineup a broadcast station that its subscribers value. Moreover, as an empirical matter, the observed carriage behavior by cable systems indicates that the lost subscriber revenues from deleting most stations, and virtually any station with significant viewing, apparently exceed any gains in advertising revenue that the cable operator might realize from excluding them. Thus, the broadcast industry's characterization of exclusionary behavior by cable operators is dramatically at odds with actual carriage patterns during periods when cable operators were not subject to the must carry rules. In short, the arguments of the Government and the broadcasters are flawed and the empirical evidence contradicts their conclusion.

---

exceed incremental costs, and only those services that contribute most to profits will be carried.

[63] Cited in *Cable Television Consumer Protection and Competition Act of 1992*, Report 102-628, p. 51 (Report from the Committee on Energy and Commerce, June 29, 1992).

[64] *Cable Television Consumer Protection and Competition Act of 1992*, Public Law 102-385, Sections 2(a)(14) and 2(a)(15).

The advertising benefits to a cable operator from excluding a broadcast station will not be substantial because local spot advertisers have alternatives to cable programming through which they can reach cable subscribers. The most obvious alternative would be the other broadcast stations that continue to be carried on the cable system. Thus, to the extent that the cable system is carrying other broadcast stations, some of the benefits will be captured by these stations rather than the cable system.[65] The cable operator will reap fewer of the benefits from excluding any particular station the larger the number of other local stations that it continues to carry. Since overall viewership of basic cable services with local advertising availabilities is about 25 percent among cable subscribers, cable systems will capture a relatively small share of the viewership of the excluded station.[66]

Non-carriage of lightly viewed stations would not have any significant impact on the cable operator's ability to raise advertising prices on cable programming services. These lightly viewed stations do not deliver enough viewers to advertisers for excluding them to have a quantitatively important effect on the local advertising market.

While the advertising market benefits to the operator from exclusion would be greatest for stations with large

[65] My discussion in the text should not be interpreted to mean that the relevant antitrust market includes only cable systems and television broadcast stations. Indeed, the presence of even more alternatives leads to additional "leakages" that will further reduce the profitability of an exclusionary strategy. Most importantly, the exclusion of the broadcast station may lead some advertisers to reach the lost cable subscribers by increasing their reliance on local radio stations and local newspapers instead of purchasing spots on cable programming serviecs. There are other significant "leakages" as well. Rather than watch ad-insertable cable programming, subscribers may instead turn to services without any local commercial advertising or to Pay-Per-View.

[66] The discussion in the text overstates the gain in viewing to cable systems if other broadcast stations are closer substitutes for the stations that operators choose not to carry.

viewership, these highly viewed stations are likely to be sufficiently valued by subscribers that their carriage is very profitable to operators, even in the presence of any effect on the advertising market. If cable subscribers place a relatively high value on a heavily-viewed broadcast station that is excluded from the operator's lineup, those subscribers will reduce the amount that they are willing to pay for the basic cable package. As a result, some, and perhaps many, subscribers will terminate cable service and/or the cable operator will be compelled to reduce subscription rates. Whatever the combination of these effects. the cost to the operator of the exclusionary strategy is the profit lost from those cable subscribers who no longer place as high a value on the cable system's lineup because of the exclusion of the station.[67] The lost profit is likely to outweigh the advertising gains to the cable operator.

One indicator of the extent to which broadcasters believe cable subscribers value local broadcast stations is a 1993 analysis commissioned by National Association of Broadcasters. The dollar values that subscribers placed on the affiliates of the three major networks, and on the primary PBS station exceeded the value placed on all other individual cable networks in the study, except for CNN. The value of the first Fox affiliate was exceeded only by the value placed on CNN and ESPN.[68] Excluding six of the more popular basic cable services (one of which is a broadcast station, WTBS), the value of the first independent station carried (i.e., neither a major network nor Fox affiliate) plus the value of any one of the three

[67] If the cable operator does not replace the excluded broadcast station with another cable service, the operator will experience some cost savings. On a per-subscriber basis, the amount of these savings is likely to be trivial.

[68] Norman Hecht Research, Inc., *Cable Subscribers' Valuation of Broadcast and Cable Channels on Two Cable Systems*, April 1993 (Bates Nos. 4009915-9925) at Bates No. 4009917.

major network affiliates exceeded the value of *all* other basic cable services combined.[69]

While this discussion cannot prove that the lost profits from non-carriage are greater than the gain in advertising profits, the actual carriage behavior of cable operators leads inexorably to the conclusion that in fact such exclusionary behavior is not profitable. The evidence I have discussed above indicates that, prior to the re-imposition of the must carry rules, the cable systems in the sample carried 90 percent of all local broadcast stations with a reportable rating in non-cable households, and local stations available on the typical subscriber's system accounted for 98 percent of all local broadcast station viewing. The typical subscriber's system carried 99 percent of the local network affiliates, 98 percent of the local Fox affiliates; 98 percent of the local VHF independents, 61 percent of the local UHF independents, 78 percent of all local noncommercial stations, and 98 percent of all local stations having at least a 2 percent share of all local station ratings. Thus, the stations that are voluntarily carried together account for virtually all local advertising sales by broadcasters.

To the extent that cable operators "excluded" local stations from carriage lineups, the excluded stations largely consisted of those with viewing shares of less than one-half of one percent. Put differently, these are precisely the kinds of stations whose non-cariage would *not* improve the advertising fortunes of the cable industry because they account for such a small proportion of local advertising sales.

In short, by focusing only on the gains in advertising that a cable operator *might* realize by excluding a broadcast station from its channel lineup, the Government and the broadcasters have simply ignored the costs to the operator of failing to carry a station that is highly valued by subscribers. Equally important, the kinds of stations

[69] *Idem.*

for which exclusion would reap the largest advertising benefits for the cable operator are precisely the kinds of stations that cable operators have in the past freely chosen to carry. Thus, the contentions of the Government and of the broadcasters are contradicted by the available evidence.

I conclude that must carry rules are not needed to prevent cable systems from excluding broadcast stations from their channel lineups in order to enhance their advertising revenues. Any gains in advertising revenues from such a strategy would be limited, and these gains would be more than offset by losses in subscriber revenues that would occur if popular local broadcast stations were not carried. The claims that cable operators will engage in such exclusionary behavior are inconsistent with what they actually did when the must carry rules were not in effect.

C. Broadcast Carriage and Cable Program Service Ownership

The Government and the broadcasters have also claimed that ownership links between cable operators and cable programming services provide the operators with an additional anticompetitive incentive to refuse carriage requests by broadcast stations. The logic underlying the usual concerns about the anticompetitive effects of vertical links between cable systems and cable programming services is that, by declining to carry an unaffiliated service, vertically integrated operators reduce the revenues of such services. In this argument, this revenue reduction compels disadvantaged programmers either to exit the market, raise prices, or reduce the quality of their service offering. In any event, the relative attractiveness to other distributors of the unaffiliated programming is reduced, so that the vertically integrated operator can raise the price of its own programming to them.

Two aspects of this theory should be noted. First, and most important, these allegations are at odds with the real-

ity of carriage. When cable operators have been permitted to choose freely the services that appear on their systems, they choose to carry those local stations that together account for virtually all local television viewing.

Second, there is nothing in the argument to suggest that broadcast stations would be more disadvantaged than unaffiliated cable programming services. Indeed, the operator may well choose not to carry unaffiliated cable programming services while still carrying broadcast services.

Under the Government's and the broadcasters' theory, if a cable operator were to deny carriage to a local broadcast station, the revenues, and perhaps the programming quality, of the station would fall.[70] In this case, the cable operator would then be able to raise the price of its own affiliated services only to the other cable systems reached by the broadcast station. If, instead, the same cable operator were to deny carriage to an unaffiliated and nationally distributed cable programming service, and thereby force that service to reduce its quality, the integrated cable operator could charge more for its own affiliated services not only in the local area, but in the rest of the country as well.

Consider a vertically integrated cable operator located in the Washington DC ADI that (hypothetically) declines to carry a popular independent local station.[71] As a result of non-carriage, the DC station may have to reduce the

[70] For purposes of simplicity, I am assuming that a cable operator has an incentive to deny carriage for anticompetitive reasons. However, the existence of that incentive depends on a number of factors, including the size of the system (which affects both the costs to the operator of denying access to the station by its subscribers and the ability of the operator to inflict harm on the broadcast station), the size of its ownership interest in the affiliated services, and the substitutability of other cable services or broadcast stations for the station or service that is denied carriage.

[71] For purposes of this discussion, I am simply assuming that the cable operator would have both the ability and the incentive to engage in this behavior. In fact, the cable operator is likely to have neither.

quality of its programming. This in turn may enable the DC cable operator to raise the price of its affiliated programing services to other local cable systems—those for whom the excluded station is local.

But non-carriage of the DC station will not permit the cable operator to raise the price of its affiliated programming service to cable systems distant from Washington—say, cable systems in Los Angeles. Cable subscribers in LA are unlikely to consider a DC independent station to be a good substitute either for any of their local stations or for any cable programming service. Thus, the LA cable operator would not in any event have carried the DC independent. If the LA operator would not have carried the DC station, then that station could not be competing with cable programming services to sell the services to LA cable systems. Thus, inflicting harm on a DC station will not allow the DC cable operator to raise prices for its affiliated program services in Los Angeles. Therefore, broadcast stations are less likely to be object of such conduct than are other cable programming networks.

In summary, Government and broadcaster claims that vertical integration increases operator incentives to deny carriage to broadcast stations are unsupported. First, the general argument aplies equally to broadcast stations and cable programming services. Second, the implication that vertically-integrated cable operators will tend to deny carriage to local broadcast stations is at odds with actual carriage behavior.

V. Current and Future Carriage Patterns

The Government and the broadcasters, while arguing that significant exclusionary behavior has already occurred (a claim that is clearly inconsistent with the evidence), also argue that current carriage patterns are not in any way indicative of future behavior. Specifically, Defendants claim that the quantitative importance of cable operators' alleged incentives for exclusionary behavior will increase over time as cable's advertising revenues increase

in importance. Thus, Defendants claim that carriage behavior during non-must carry periods is not a reliable indicator of future behavior because, they assert, cable operators' propensity to drop broadcast stations will increase over time.

Even if, *other things equal*, the Government and the broadcasters were correct in their prediction, other things are most certainly *not* equal. The trend in cable advertising revenues is not the only future development that is likely to affect cable cariage decisions. In order to assess what the future portends for cable carriage of broadcast stations in the absence of must carry regulations, one must assess the effect of *all* of the changes that affect these carriage decisions. In my judgment, other developments that are likely to *encourage* cable carriage of broadcast stations will more than offset any alleged advertising-related disincentive for cable carriage.

For example, the growth of multichannel competition will likely *increase* the incentives to carry local broadcast stations. A clear example of how additional competition will encourage cable carriage of local broadcast stations is the current experience with direct broadcast satellites (DBS). Direct-to-home broadcast satellites using small "dishes" for reception have finally become a reality and offer the potential for significant competition to cable systems. However, unlike cable systems, these new services cannot offer local television broadcast stations to their subscribers. The continued carriage of local stations creates an opportunity for cable operators to distinguish themselves from the direct-to-home satellite services. Cable operators can advertise themselves as the subscription service that preserves viewer access to local stations. This will increase the incentives for cable operators to carry local stations in the future.

This is precisely the competitive advantage that the United Paramount Network has emphasized in its marketing of UPN over-the-air affiliates to cable systems. In particular, in noting that "UPN Provides Cable with Advantages over Satellite and Wireless Competitors," UPN emphasizes that "UPN stations are rarely carried by satellite and wireless systems" and that "Only cable can combine satellite and broadcast services." [72]

Indeed, cable television itself has already begun to advertise this very advantage over DBS to its subscribers. For example, in a bill insert entitled *Cable or DBS? Ten reasons cable television is the better choice*, which was mailed to over 400,000 of its subscribers in 30 systems in early 1995, Time Warner listed as the first reason: "With cable you receive all local broadcast stations, DSS [the name under which the Direct Broadcast Satellite system is sold] cannot offer local stations. . . . . With DSS, you would be missing local news, weather, sports and other local programming." Similarly, Media General Cable advertises to potential subscribers in Fairfax, VA that "Direct TV and USSB are both national programming services, so they cannot provide any local broadcast stations. . . DSS programmers are also prohibited from providing network programming from ABC, CBS, NBC, and Fox to customers in markets served by any network affiliate station, including Fairfax County."

An important prospective delivery system is that which the telephone companies are seeking to provide. Telephone companies plan to offer their telephone subscribers video services using their current or upgraded telephone plant. Subscriber competition between cable and telephone company-provided services will create enhanced incentives for local station carriage. If cable were to choose not to carry subscriber-valued local broadcast stations, it would lose subscribers and revenues to its telephone comany competitor.

A second, but longer-term, development that will create incentives for increased carriage of local broadcast stations are network upgrades and digital compression that will greatly expand the number of channels existing sys-

[72] Bates No. UPN 000056.

tems can offer their subscribers. While it may be some time before the cable industry is able to provide its subscribers with the "mega-channel universe," as channel capacity increases, local broadcasters will not have to displace more valuable cable programming services in order to be carried as they must where channel capacity is limited. Moreover, because compression will reduce the operator's per-channel capital costs, the operator's incentives to add broadcast stations to its channel lineup will increase. Put somewhat differently, the threshold for carriage of an additional broadcast station will fall as capacity increases. Consequently, by encouraging operator carriage of local broadcast stations, the increase in channel capacity will help maintain the availability of broadcast stations to non-cable households over the longer term.

Fortunately, the Court need not determine whether I or the Defendants' experts are the better predictors of broadcasting's future. The Court need only look at the behavior of those who are "betting" on the prospects for the broadcasting industry—investors in broadcast stations and new networks. The speculation of the Government and the broadcasters that the broadcast industry will be in jeopardy anytime in the near future is flatly contradicted by the continuous entry of new broadcast stations and the success of the Fox Network.

If there were any quantatively important risk that sometime in the future cable operators would begin excluding from their systems popular broadcast programming, one would have to assume that the Fox network (which experienced phenomenal growth during the non-must carry period), as well as the stations that have recently become operational, would not have chosen to enter the business of broadcasting. These entities have incurred substantial sunk costs in the development of long-lived assets.[73] I would place considerable weight on their expectations

[73] A recent trade press report estimated that Fox invested $300 million during its first four years. See *Broadcasting & Cable*, January 2, 1995, p. 30.

(as indicated by their investments) that the future of over-the-air broadcasting remains robust.[74]

In summary, there is no reason to believe that carriage behavior of cable operators during non-must carry periods is a misleading indicator of their future behavior. Indeed, the development of multichannel competition has already increased cable operators' incentives to carry local broadcast stations and that incentive will be enhanced as technology permits large increases in the channel capacity of existing cable systems. There is every reason to believe that the broadcast industry will continue to be as resilient and as adaptable as in the past. If, at some time in the distant future, cable operators in fact begin behaving in the way broadcasters have, for more than thirty years, predicted they would behave, Congress or the FCC might then consider re-imposing a must carry rule. However, there is no reason for consumers to bear the costs of such a rule until that distant future arrives, if it ever does.

VI. The Financial Health of the Broadcast Industry

Against the background of my analysis of carriage patterns in the absence of must carry rules, it should come as no surprise that I have concluded that the broadcast industry will not be harmed by the absence of must carry. Although there is likely to be considerable controversy about reported broadcast industry profits, or calculated accounting rates of return,[75] or estimated Q-ratios for broadcasting,[76] and what those data imply, nothing pro-

[74] These data are discussed in greater detail in the next section.

[75] For the standard criticism of the use of accounting rates of return, see F.M. Fisher and J.J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," 73 *American Economic Review* 82 (1983).

[76] The Q-ratio is the market value of a firm divided by the replacement cost of its assets, and has been used by some as a measure of profitability. Attempts to employ such measures have also been criticized, often for incorrectly measuring replacement costs.

vides more compelling evidence that existing broadcasters are operating profitably than the desire of others to join their ranks.[77] For that reason, I have conducted an analysis of the entry of broadcast stations during the past 40 years, focusing especially on entry during the recent period of rapid cable growth. I have analyzed the number of stations in the aggregate; in various station categories (network affiliates and independents, VHF and UHF, and commercial and non-commercial); and in individual service areas (ADIs) to determine whether, on balance, the number of stations is growing or falling (i.e., whether entry or exit is occurring).

I find that the number of stations has exhibited, and continues to exhibit, growth in all categories. Moreover, I find that the number of commercial stations increased, or remained unchanged, in every geographic market between 1981 and 1992, i.e., there is no television market in which the availability of free television declined during this period. This provides incontrovertible evidence of the current profitability, and expected future profitability, of the broadcast industry and individual broadcasters.

It should also be noted here that the evidence on the growth in the number of broadcast stations that is reported below understates the profitability of incumbent broadcasters for three reasons. First, the number of broadcasters that can serve a given area is limited by the number of broadcast station assignments that the FCC has made to that area. All incumbent stations in a given area can be making substantial profits yet entry may still not occur if there are no unused allocations. As station growth has occurred, this situation will occur in a larger number of markets, thus limiting further growth in the

[77] For an early analysis of the determinants of the number of broadcast stations in each area, see S.M. Besen and P.J. Hanley, "Market Size, VHF Allocations, and the Viability of Television Stations," 24 *Journal of Law and Economics* 41 (1975).

number of stations.[78] Second, to the extent that entrants must operate in the UHF band and without the benefit of network affiliations, while the incumbents have VHF licenses and/or network affiliations, high profits received by incumbents may be insufficient to attract entry.[79] Finally, the information reported below is limited to the growth of full-power stations. Additional evidence on the profitability of broadcasters is the growth in the number of low-power stations that has taken place over the past decade since the FCC permitted the entry of new stations operating at less than full power.[80]

One final piece of evidence is also important in judging the current economic position, and future prospects, of broadcasters. When cable was deregulated in 1980, there were only three over-the-air networks with which broadcast stations could affiliate. In the last nine years, the Fox network has come into existence and has matured into a "major" network.[81] The entry of a new network is clear evidence that their owners believe that there is, and will be, a sufficient number of viable stations with which they can affiliate to justify the substantial investments they must make to begin a new broadcast net-

[78] For example, 38 percent of the unused station allocations in 1980 have since been filled. (See *Television & Cable Factbook: Services Volume No. 63* (Warren Publishing, Inc., Washington, DC, 1995), pp. I41; I68-71.)

[79] Many studies have identified the impact of network affiliation on station profitability. For the present purposes, the most relevant evidence is the finding by Besen and Hanley, *op. cit.*, which confirms the hypothesis that "a larger increase in [market size] will be required to go from 3 to 4 stations than from 2 to 3 stations" (p. 49) because a fourth station in a market would have to operate as an independent while a third station could obtain a network affiliation. The presence of a fourth network would lower the size of a market in which four stations could operate profitably.

[80] A total of 499 LPTV stations have begun operation since 1985. (See *1995 Television & Cable Factbook* pp. B1-94.)

[81] Below, I provide a brief history of the development of Fox.

work.[82] At the same time, the entry of a new network enhances the viability of these stations by providing them with access to higher-quality (i.e., more expensive) programming than they could expect to obtain as independent stations. Thus, new broadcast stations and new networks are in a symbiotic relationship in which the entry of new stations makes possible the entry of new networks, and the entry of new networks enhances the economic position of these new stations.

A. Broadcast Station Growth

Industries with increasing expected profitability (relative to risks) tend to attract entry by new firms. The opposite occurs in industries with declining expected profitability—firms exit the market. Thus, the growth over time in the number of firms in an industry can be taken as a measure of expectations regarding its future health. Accordingly, one can analyze the pattern of growth in the number of broadcast television stations to draw inferences about the expected future health of the broadcast television industry.

The number of broadcast television stations grew steadily from 1953 to 1994—from 356 to 1,532, or an annual average net increase of 28 stations per year. From 1980 to 1992, a period of dramatic growth in cable subscribers, the number of additional stations averaged 38.1 per year.

[82] In 1980, there was significant evidence that the principal factor that inhibited the entry of a fourth over-the-air network was the limited number of broadcast stations with which a new network could affiliate, combined with the fact that many potential affiliates operated in the UHF band. The growth in the number of stations that has occurred since that time, combined with the fact that cable carriage overcomes the UHF handicap, has apparently overcome the inhibitions to new network entry. For an analysis of the prospects for new networks in 1980 see R.E. Park, "New Television Networks: An Update," in Network Inquiry Special Staff, Federal Communications Commission, *New Television Networks: Entry, Jurisdiction, Ownership and Regulation*, Volume I, 1980.

In no year since 1953 has the total number of stations in operation actually decreased. In addition, between 1981 and 1992 there was no individual television market (ADI) in which the number of commercial stations decreased, and only three in which the number of public stations decreased. The next section describes this evidence in more detail. Attachment D describes the data and methods that were used in compiling these results.

Total Broadcast Stations. Exhibit 5 depicts the total number of broadcast stations in each year from 1953 to 1994, divided into four groups: VHF commercial, VHF non-commercial, UHF commercial, and UHF non-commercial. As of 1994, there were a total of 1,532 broadcast television stations, of which 562 were commercial VHF stations, 599 were commercial UHF stations, 126 were non-commercial VHF stations, and 245 were non-commercial UHF stations.

Exhibit 6 shows the annual net increase in number of stations. It shows that between 1980 and 1992, the net increase averaged 38.1 stations per year.

VHF vs. UHF. Exhibit 7 depicts the four categories of stations separately. It is evident from the figure that the pattern of growth in the number of stations from 1953 to 1994 is very different as between VHF stations and UHF stations. The number of VHF stations grew very rapidly in the 1950s, from 107 in 1950 to 488 in 1960. Since about 1967, the number of VHF stations has tended to grow by fewer than 10 stations per year, reflecting the fact that most VHF allocations were in use by that time. The growth in the number of UHF stations was relatively slow until about 1980 but accelerated rapidly thereafter.

Commercial vs. Non-Commercial. Exhibit 7 also shows that growth in non-commercial stations has been fairly constant, except for a slightly higher growth in the mid 1960's. In contrast, commercial stations exhibited strong growth in the 1950s and again during the 1980's.

Affiliates vs. Independents. The counts compiled from individual station data allow us to analyze separate growth patterns for network affiliated and independent television stations. The three major networks (ABC, CBS, and NBC) experienced very large growth rates in the number of affiliates during the 1950s, as they grew to maturity. Growth continued at a slower pace during the 1960s. Since 1970, the net growth in the number of Big 3 network affiliates has slowed even more. On the other hand, the number of Fox affiliates and independent stations has grown the fastest since 1980. Exhibit 8 shows station growth for various categories of affiliation, and Exhibit 9 shows station growth separately for particular networks.

Exhibit 10 shows the annual net increase in the number of television stations, by type. Between 1980 and 1992, the number of additional UHF independent stations averaged 24.2 per year. And, from 1992 to 1994, the average was 13.5 net additional stations per year.

Station Growth by ADI. Between 1981 and 1992, no ADI experienced a decrease in the total number of commercial stations in operation. Only three ADIs experienced a decline in the number of public stations. See Exhibit 11. This indicates that even where individual stations exited an ADI, they were replaced by other entrants, leaving the number of stations unchanged or larger. If one station exits but is replaced by another, this reflects the entrant's belief that it can operate successfully although the exiting station could not. In this situation, exit reflects more the ability of the exiting firm than it does the profitability of operating in that market.

B. Do (Some) Stations Exit?

The above data clearly indicate that the net change in the number of stations in each market over the past 15 years has been either positive or zero. Moreover, there were only seven stations listed as operating in 1980 that were not also listed as operating in 1993.

Although the fact that there are no markets in which the number of commercial broadcast stations declined is indicative of the profitability of broadcasting in each market, I have nonetheless conducted an analysis of those stations that were identified in the Association of Independent Television Stations' (INTV), *Free Television Under Siege*, a 1988 report that included case histories of 46 broadcast television stations complaining of unfair actions taken against them by local cable systems.[83] The report advanced the argument that "cable operators have begun to use their control over their monopoly transmission conduit to unfairly advance the competitive interests of their proprietary programming services to the disadvantage of free, over-the-air broadcasting" (p. 2). It argued that cable operators—by refusing to carry broadcast stations, by repositioning them in the cable channel lineup, or by demanding payment-for-carriage—were contributing to the financial difficulties of free broadcast TV.

If the INTV claims of financial vulnerability deserve any credence, the stations they claim to be most vulnerable should have been especially likely to exit, particularly during the period in which the must carry rules were not in effect. Because the case histories in the INTV report were held up as examples of the kinds of leverage that cable was allegedly exerting over broadcast television, it is instructive to examine how each of these television stations has fared since the date of the report. To that end, I analyzed these stations to determine whether they are still in operation.

My analysis shows that 42 of the 46 stations profiled in the INTV report are still operating as full-power com-

---

[83] *Free Television Under Siege: Typical and Illustrative Case Histories of Anti-Competitive Conduct by Cable Television Systems*, submitted to The Congress of the United States and The Federal Communications Commission by the Association of Independent Television Stations, May 1988.

mercial broadcast television stations. Two others are still on the air, but one has become a non-commercial station and one a satellite station. Only two of the 46 stations are apparently no longer operating, but in one case a new commercial station has since entered the affected market. These facts are inconsistent with the broadcaster's claim that the broadcast industry is in peril.

Attachment E describes the steps that were taken to compile this information.

C. Network Entry

Not only has the number of broadcast stations increased steadily during the period of most rapid cable growth, but the number of television networks with which these stations can affiliate has also grown. As a result, the future prospects of many new broadcast station entrants have been enhanced. This section briefly recounts the entry of the Fox network.

The Fox network began late-night programming in the fall of 1986 and prime time programming on Sunday nights in the spring of 1987, broadcasting through 108 affiliates.[84] Although analysts questioned the viability of a fourth network, after initial losses,[85] the Fox network showed its first profit in late 1987, when it earned $400,000 in its second quarter.[86] By the fiscal year ending June 1990, Fox's reported profits were $33 million and it had $300 million in advertising sales.[87] In the fall of 1991, Fox's seven owned stations and 126 affiliates

[84] "TV Syndication—Fox Backers Say Fourth Network Ready to Fly," *Advertising Age*, September 22, 1986, p. S4. "The Fourth Network," *Business Week*, September 17, 1990, Vol. 3178, p. 114.

[85] "Fox Keeping Careful Eye on Network Performance," *Broadcasting*, June 20, 1988, p. 40.

[86] "The Fourth Network," *Business Week, idem.*

[87] "The Fox Trots Faster," *Time, August* 27, 1990, p. 64.

reached 91 percent of television households.[88] A Fox document entitled "Fox % US Coverage History" shows that by May 1992 (i.e., prior to the reimposition of must carry), Fox had 140 affiliates and 95 percent coverage.[89] According to a recent report, the Fox network's profits were $80 million in 1994, and its revenues were $950 million.[90]

It is not clear whether increases in the number of independent stations have led to the success of the Fox network or if increased network support has led to station entry. What is clear is that the success of a network depends on the number of stations that carry its programming. In this way the entry of new networks is intimately connected to increases in the number and strength of independent stations. Thus, the continuing and growing success of the Fox Network conveys a very clear signal of the ongoing strength of the broadcast industry.

VII. Review of Defendants' Reports of Expert Economists

I have reviewed the reports and depositions of the Defendants' expert economists and have found nothing in those reports that would alter my conclusions. Perhaps most importantly, Drs. Noll, Haring and Dertouzos agree with me that in fact many local stations will be carried in the absence of any must carry provisions.[91] We also agree that those stations that will have difficulty gaining cable carriage are ones that are ligthly viewed, even in non-

[88] "The Fourth Network," *Business Week, idem.*

[89] Bates No. 001040.

[90] S. McClellan, "ABC takes top network profit honors," *Broadcasting & Cable*, April 3, 1995, pp. 8-9.

[91] Summary Expert Report (Roger G. Noll), paragraph 25; Deposition of John C. Haring, pp. 46-7, 254-5; Deposition of James N. Dertouzos, pp. 65-6.

cable households, although my analysis indicates that cable operators will carry a substantial percentage of even those stations.

We disagree, however, in other important areas. In particular, the factual analysis that I have presented in my testimony contrasts sharply with the conjectures of Defendants' economics experts. Drs. Noll, Haring and Dertouzos specifically conclude in their expert reports that the must carry provisions significantly benefit some or all consumers. They first argue that cable operators currently have incentives to drop broadcast stations in the absence of must carry provisions, although they do not quantify the effects of these incentives. They then assert that these incentives are the result of cable operators' interest in garnering greater profits from the sale of local advertising, cable operators' ownership interests in cable programming services that lead them to favor their own services, and cable operators' desire to reduce the quality of over-the-air service in order to encourage increased demand for cable service. Further, these experts argue that the incentives to drop local stations will increase over time as the cable operators' revenues from the sale of local advertising increase. Finally, they argue that as a result of the growing incentives for the cable operator to drop stations —particularly resulting from the increase in advertising revenues—the absence of a must carry provision will eventually result in significant adverse harm to some broadcast stations.

Each of these experts takes care to indicate that they are only examining in a qualitative (as opposed to quantitative) way how these particular incentives will affect the cable operator's decision to add one more (marginal) broadcast station to its lineup. They thus offer little in the way of concrete predictions.

With respect to the assertion that cable operators already have incentives to drop local stations, my review of actual carriage behavior indicates that these incentives

are small or non-existent. Ninety percent of all local stations with *any* reportable rating were carried even when there were no must carry rules. Thirty-one percent of all local stations with *no* reportable ratings were carried. The cable system serving the typical subscriber carried stations that accounted for 98 percent of the all viewership of local stations in non-cable households. No empirical basis for the must carry provisions can thus be found in observed operator behavior.

Moreover, Defendants' economics experts underestimate the value that cable subscribers place on viewing local broadcasting stations. If cable operators chose not to carry those stations that cable subscribers value, cable subscribership and the price cable operators charged subscribers would likely fall substantially. In short, the subscriber revenues lost if these stations were not carried apparently far outweighs any resulting gain in revenues from noncarriage.

In addition, whether the incentives for cable operators to carry local stations will decline significantly, or at all, in the future depends not only on any increase in advertising revenues that cable systems may experience but on a large number of other factors that are ignored by Defendants' economics experts. As I noted previously, the growth of DBS and other multichannel competitors, and the longer term expansion in the chanel capacity of cable systems, will likely *increase* the incentives to carry local stations. I expect that these heightened incentives for station carriage will more than offset any reduced carriage incentives.

Finally, and perhaps most importantly, there is no empirical basis for Defendants' experts to conclude that the broadcasting system—and even individual broadcast stations—will experience any significant adverse effects from non-carriage in the future. I have already described the ongoing investment in both new broadcast stations and new networks that existed prior to the passage of the

1992 Cable Act. If the absence of a must carry provision had significantly reduced the expected return to investment in new stations and networks, one should have observed either no growth or exits by firms from the broadcasting industry. Instead, new stations continued to come on the air, and the Fox Network entered and continued to grow. Given the long-lived nature of broadcasting assets, this new entry strongly indicates that, for some time to come, the broadcast industry will continue to thrive and the availability of free television to non-cable households will not be jeopardized.

Dr. Rohlfs' expert report on behalf of Defendants focuses narrowly on the single issue of whether stations that are dropped by large cable systems (i.e., those accounting for a large proportion of a county's television households) experience a decline in ratings in cable households. The qualitative conclusion that that Dr. Rohlfs reaches is surely noncontroversial: stations will not be better off if they are not carried by cable systems, and they may be harmed. The question is by how much, and in this regard, Dr. Rohlfs' analysis may be misleading. First, Dr. Rohlfs' analysis is based on data whose accuracy is in serious doubt.[92] Second, despite his assertion, there is no evidence that his results can be extended to non-carriage by smaller cable systems. Finally, Dr. Rohlf appears to dismiss the possibility that cable carriage depends on station popularity, a proposition that is both at odds with common sense and inconsistent with any empirical findings.

VIII. Conclusion

As Justice Kennedy indicated in his opinion *in Turner Broadcasting System, Inc. v. F.C.C.*:[93]

> The Government's assertion that the must-carry rules are necessary to protect the viability of broadcast television rests on two essential propostions: (1) that unless cable operators are compelled to carry broadcast stations, significant numbers of broadcast stations will be refused carriage on cable systems; and (2) that the broadcast stations denied carriage will either deteriorate to a substantial degree or fail altogether.

[92] See the Declaration of Gregory Klein in this proceeding.

[93] 114 S.Ct. 2445 (1994).

The evidence presented in this report refutes both of these propositions. First, I find that, in the absence of must carry rules, most broadcast stations were carried by cable systems. Moreover, virtually all stations with measurable viewing, and many without measurable viewing, were carried by cable systems even when they were not required to do so. Further, the stations that were carried accounted for virtually all local broadcast station viewing during this period. Finally, there is no evidence of a link between the carriage by cable operators of ad-insertable program services, or an ownership link with cable program services, and their decisions to carry local broadcast stations. The only possible conclusion to draw from this evidence is that the decisions of cable operators about whether or not to carry a particular broadcast station are motivated not by an anticompetitive intent but by the desire to provide the programs that their subscribers most want and are most willing to pay for.

Second, broadcast television is not in economic peril. The number of television broadcast stations has grown continuously over the past 15 years, during which cable television has grown substantially in terms of subscribers, services, and viewing. Moreover, there is no broadcast market in which the amount of free television available has declined during this period. In short, broadcast television continues to grow and prosper even as cable provides an increasingly important competitive alternative.

For these reasons, I conclude that cable does not ". . . pose a demonstrable threat to the survival of broadcast television" and that the Government has not, and cannot,

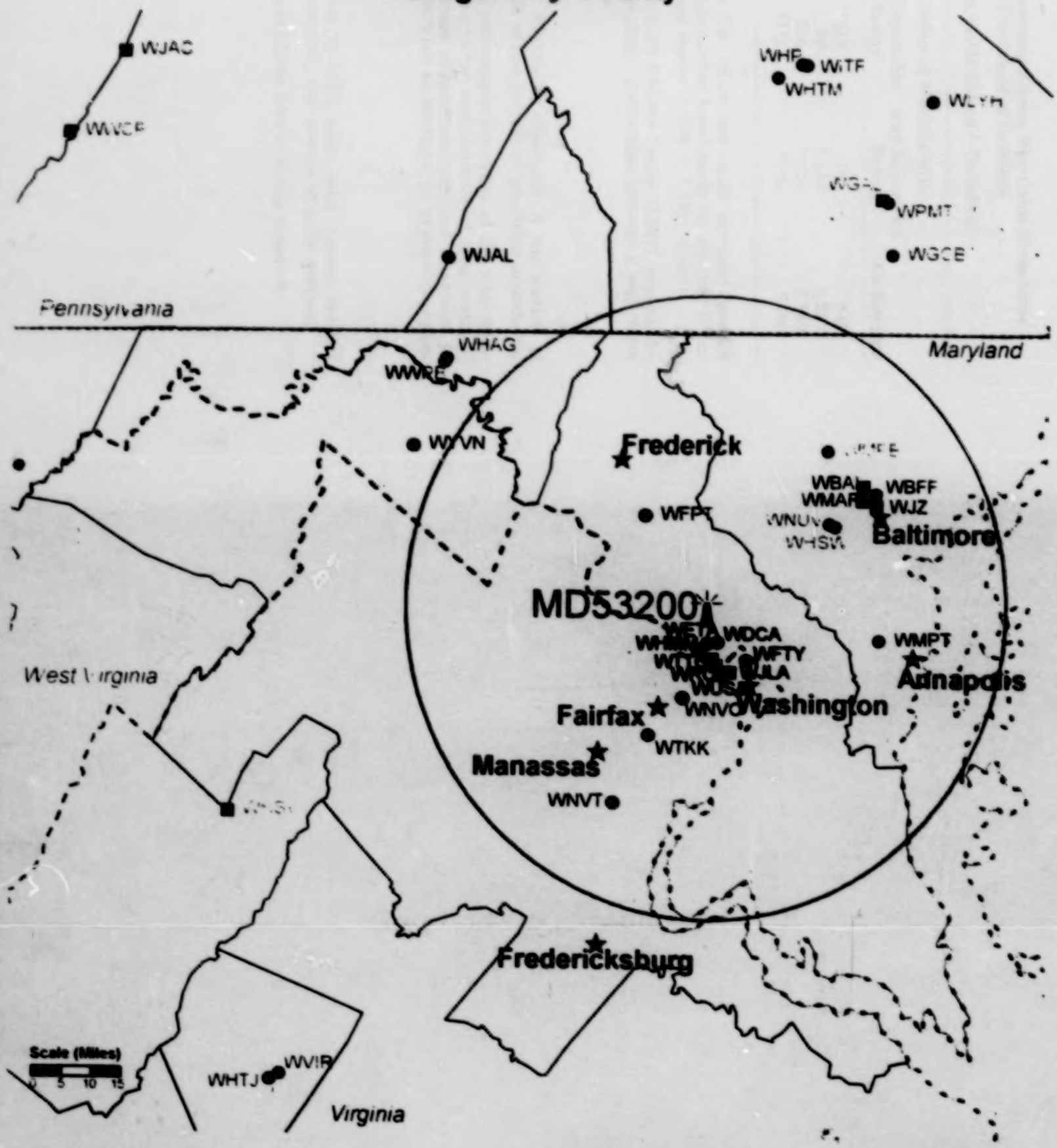
show that "the economic health of local broadcasting is in genuine jeopardy and in need of the protections afforded by must carry." The results presented in this report indicate that there was no factual predicate for Congress reasonably to have concluded otherwise when it adopted the must carry provisions of the Cable Act of 1992.

May 24, 1995

/s/ Stanley Besen
STANLEY BESEN

Exhibit 1
Cable System MD53200
Montgomery County

RESTRICTED



- Washington, DC ADI
- Cable System
- 50 Mile Radius Around Cable System

Cable System Carriage

- Television Station Carried
- Television Station Not Carried

Type of Station

- Commercial UHF
- Commercial VHF
- Public UHF
- Public VHF

Exhibit 2

Broadcast Station Viewership Among Non-Cable Households and the Likelihood of Carriage

(Using a Reportable Rating [1] Threshold)

	Number of Stations with . . .		
Number of Stations . . .	No Reportable Rating	Any Reportable Rating	All Stations
Not Carried	218	131	349
Carried	98	1,133	1,231
All Stations	316	1,264	1,580
Percent Carried [2]	31%	90%	78%

86% = percent of stations for which one could correctly predict whether the station is carried based solely on whether it has a measurable audience share. ((218 + 1,133)/1,580)

The Chi-Square test statistic of 504.836 (prob = 0.000) rejects the hypothesis of a general (random) association between a reportable rating and carriage.

Note:

[1] A station's rating by Nielsen is reportable if the station is viewed by at least one-tenth of one percent of television households.

[2] Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:

Cable system data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.

Audience ratings data obtained from Nielsen Media Research.

Exhibit 3

Broadcast Station Viewership Among Non-Cable Households and the Likelihood of Carriage

(Using a Minimum One-Half of One Percent Share [1] Threshold)

	Number of Stations with . . .		
Number of Stations . . .	Less than 0.5% Share	Greater than 0.5% Share	All Stations
Not Carried	252	97	349
Carried	155	1,076	1,231
All Stations	407	1,173	1,580
Percent Carried [2]	38%	92%	78%

84% = percent of stations for which one could correctly predict whether the station is carried based solely on whether it has a measurable audience share. ((252 + 1,076)/1,580)

The Chi-Square test statistic of 505.310 (prob = 0.000) rejects the hypothesis of a general (random) association between a reportable rating and carriage.

Note:

[1] A station's share is calculated as its rating as a percent of the total ratings of all local stations.

[2] Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:

Cable system data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.

Audience ratings data obtained from Nielsen Media Research.

Exhibit 4

Audience Share and the Likelihood of Carriage

	Audience Share				
Number of Stations . . .	0%-0.5%	0.5%-2.0%	2.0%-5.0%	5.0%-10.0%	10.0% +	All Stations
Not Carried	252	41	30	14	12	349
Carried	155	81	132	163	700	1,231
All Stations	407	122	162	177	712	1,580
Percent Carried [1]	38%	66%	81%	92%	98%	78%

The Chi-Square test statistic of 578.656 (prob = 0.000) rejects the hypothesis of a general (random) association between audience share and carriage.

Note:

[1] Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

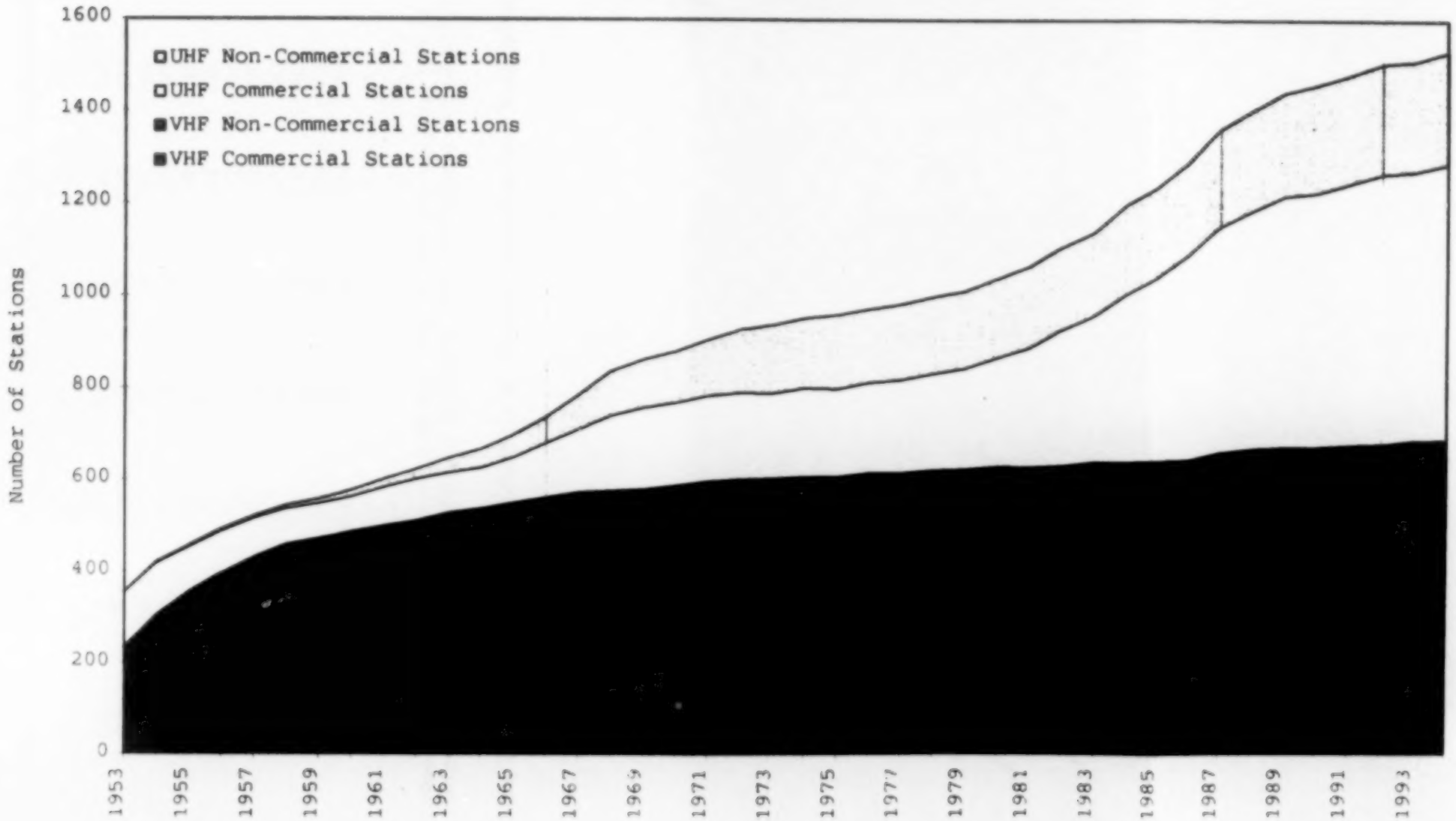
Sources:

Cable system data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.

Audience ratings data obtained from Nielsen Media Research.

Exhibit 5

Number of Broadcast Television Stations
1953 - 1994



Notes:
The *Factbook* reports data as of January 1st of each year, but the data are given here as the year-end total for the previous year. Vertical lines are placed at the initiation of must-carry rules in 1966, the voiding of must-carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Source:
Television & Cable Factbook, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

Exhibit 5

Number of Broadcast Television Stations, 1953-1994 [1]

Year	VHF			UHF			Total VHF and UHF		
	Commercial	Non-Commercial	Total	Commercial	Non-Commercial	Total	Commercial	Non-Commercial	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1953	233	1	234	121	1	122	354	2	356
1954	297	8	305	114	3	117	411	11	422
1955	344	13	357	97	5	102	441	18	459
1956	381	17	398	90	6	96	471	23	494
1957	411	22	433	84	6	90	495	28	523
1958	433	28	461	77	7	84	510	35	545
1959	440	34	474	75	10	85	515	44	559
1960	451	37	488	76	15	91	527	52	579
1961	458	43	501	83	19	102	541	62	603
1962	466	46	512	91	22	113	557	68	625
1963	476	53	529	88	32	120	564	85	649
1964	481	58	539	88	41	129	569	99	668

Note:

[1] The *Factbook* reports data as of January 1st of each year, but the data are listed here as the year-end total for the previous year. Thus, *Factbook* data for January 1, 1995 are displayed here as a 1994 end-of-year total.

Source:

Television & Cable Factbook, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

Year	VHF			UHF			Total VHF and UHF		
	Commercial	Non-Commercial	Total	Commercial	Non-Commercial	Total	Commercial	Non-Commercial	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1965	486	65	551	99	49	148	585	114	699
1966	492	71	563	118	56	174	610	127	737
1967	499	75	574	136	75	211	635	150	785
1968	499	78	577	163	97	260	662	175	837
1969	501	80	581	176	105	281	677	185	862
1970	503	86	589	179	113	292	682	199	881
1971	508	90	598	185	123	308	693	213	906
1972	510	93	603	187	137	324	697	230	927
1973	513	92	605	184	149	333	697	241	938
1974	514	95	609	192	152	344	706	247	953
1975	511	97	608	190	167	352	701	259	960
1976	515	101	616	196	160	356	711	261	972
1977	515	102	617	201	164	365	716	266	982
1978	515	107	622	209	167	376	724	274	998
1979	516	109	625	218	168	386	734	277	1,011
1980	519	111	630	237	171	408	756	282	1,038
1981	517	112	629	260	176	436	777	288	1,065
1982	519	114	633	294	179	473	813	293	1,106
1983	523	117	640	318	180	498	841	297	1,138
1984	520	121	641	363	193	556	883	314	1,197
1985	522	121	643	397	195	592	919	316	1,235
1986	524	121	645	444	201	645	968	322	1,290
1987	539	122	661	489	212	701	1,028	334	1,362
1988	545	124	669	516	218	734	1,061	342	1,403
1989	547	125	672	545	225	770	1,092	350	1,442
1990	547	126	673	551	235	786	1,098	361	1,459
1991	551	126	677	567	237	804	1,118	363	1,481
1992	552	127	679	586	241	827	1,138	368	1,506
1993	561	126	687	584	241	825	1,145	367	1,512
1994	562	126	688	599	245	844	1,161	371	1,532

Exhibit 6

Annual Change in the Number of Broadcast Television Stations, 1954 - 1994[1,2]

Year	VHF			UHF			Total	Total	
	Commercial [1]	Non-Commercial [2]	Total [3]	Commercial [4]	Non-Commercial [5]	Total [6]	Commercial [7]	Non-Commercial [8]	Total [9]
1954	64	7	71	-7	2	-5	57	9	66
1955	47	5	52	-17	2	-15	30	7	37
1956	37	4	41	-7	1	-6	30	5	35
1957	30	5	35	-6	0	-6	24	5	29
1958	22	6	28	-7	1	-6	15	7	22
1959	7	6	13	-2	3	1	5	9	14
1960	11	3	14	1	5	6	12	8	20
1961	7	6	13	7	4	11	14	10	24
1962	8	3	11	8	3	11	16	6	22
1963	10	7	17	-3	10	7	7	17	24
1964	5	5	10	0	9	9	5	14	19
1965	5	7	12	11	8	19	16	15	31
1966	6	6	12	19	7	26	25	13	38
1967	7	4	11	18	19	37	25	23	48
1968	0	3	3	27	22	49	27	25	52
1969	2	2	4	13	8	21	15	10	25
1970	2	6	8	3	8	11	5	14	19
1971	5	4	9	6	10	16	11	14	25
1972	2	3	5	2	14	16	4	17	21
1973	3	-1	2	-3	12	9	0	11	11
1974	1	3	4	8	3	11	9	6	15
1975	-3	2	-1	-2	10	8	-5	12	7
1976	4	4	8	6	-2	4	10	2	12
1977	0	1	1	5	4	9	5	5	10
1978	0	5	5	8	3	11	8	8	16
1979	1	2	3	9	1	10	10	3	13
1980	3	2	5	19	3	22	22	5	27
1981	-2	1	-1	23	5	28	21	6	27
1982	2	2	4	34	3	37	36	5	41
1983	4	3	7	24	1	25	28	4	32
1984	-3	4	1	45	13	58	42	17	59
1985	2	0	2	34	2	36	36	2	38

Exhibit 6

Annual Change in the Number of Broadcast Television Stations, 1954 - 1994[1,2]

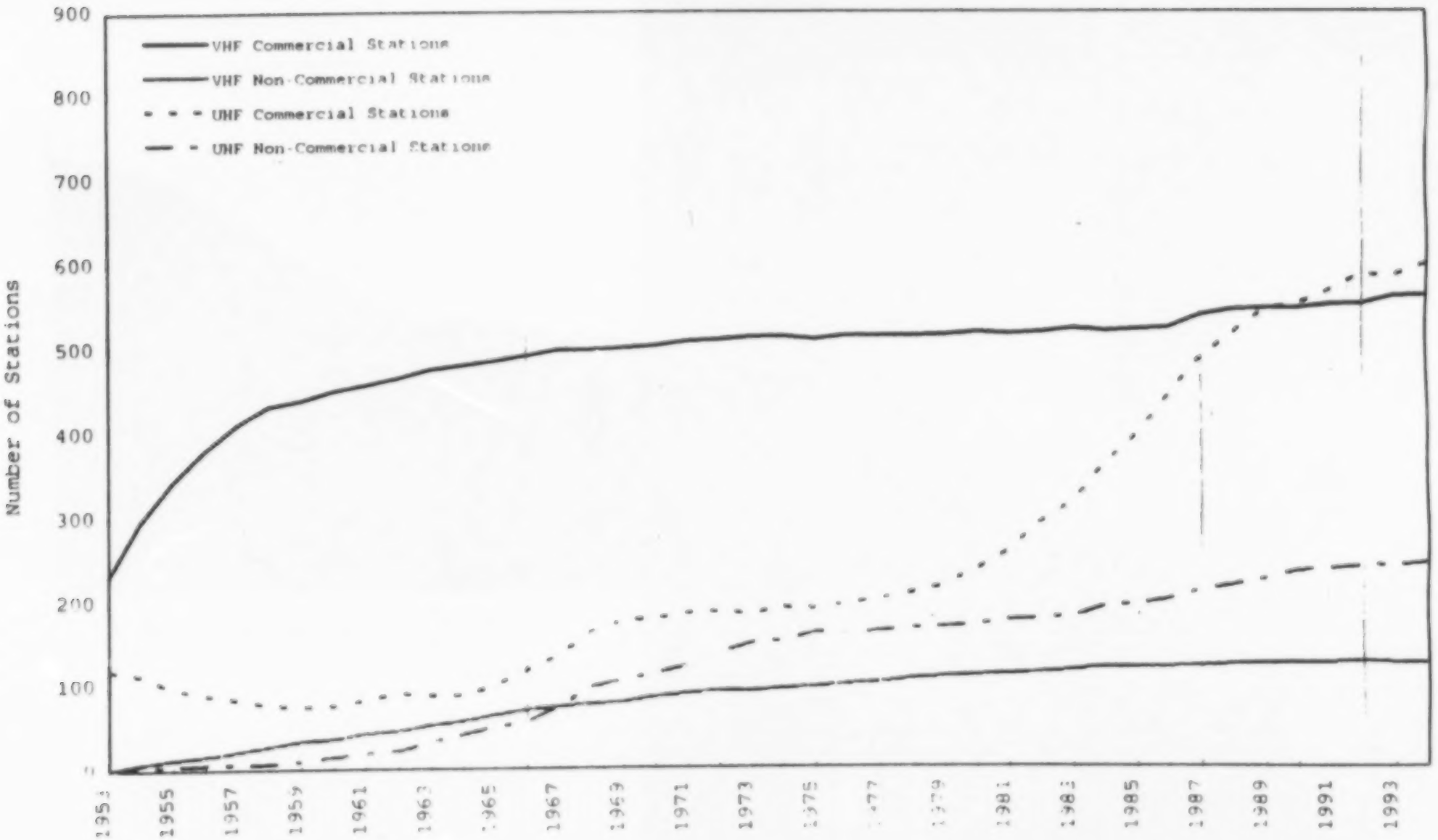
Year	VHF			UHF			Total	Total	
	Commercial [1]	Non-Commercial [2]	Total [3]	Commercial [4]	Non-Commercial [5]	Total [6]	Commercial [7]	Non-Commercial [8]	Total [9]
1986	2	0	2	47	6	53	49	6	55
1987	15	1	16	45	11	56	60	12	72
1988	6	2	8	27	6	33	33	8	41
1989	2	1	3	29	7	36	31	8	39
1990	0	1	1	6	10	16	6	11	17
1991	4	0	4	16	2	18	20	2	22
1992	1	1	2	19	4	23	20	5	25
1993	9	-1	8	-2	0	-2	7	-1	6
1994	1	0	1	15	4	19	16	4	20
Average Annual Change (1980-1992)	2.8	1.4	4.2	28.3	5.6	33.9	31.1	7.0	38.1

Notes:
[1]*The Factbook* reports data as of January 1st of each year, but the data are reported here as year-end data for the previous year
[2]Number of stations that began operation in each year.

Source:
Television & Cable Factbook, Stations Volume No. 63, Warren Publishing Inc., Washington, D.C., 1995, p. iv.

Exhibit 7

Number of Broadcast Television Stations
1953 - 1994

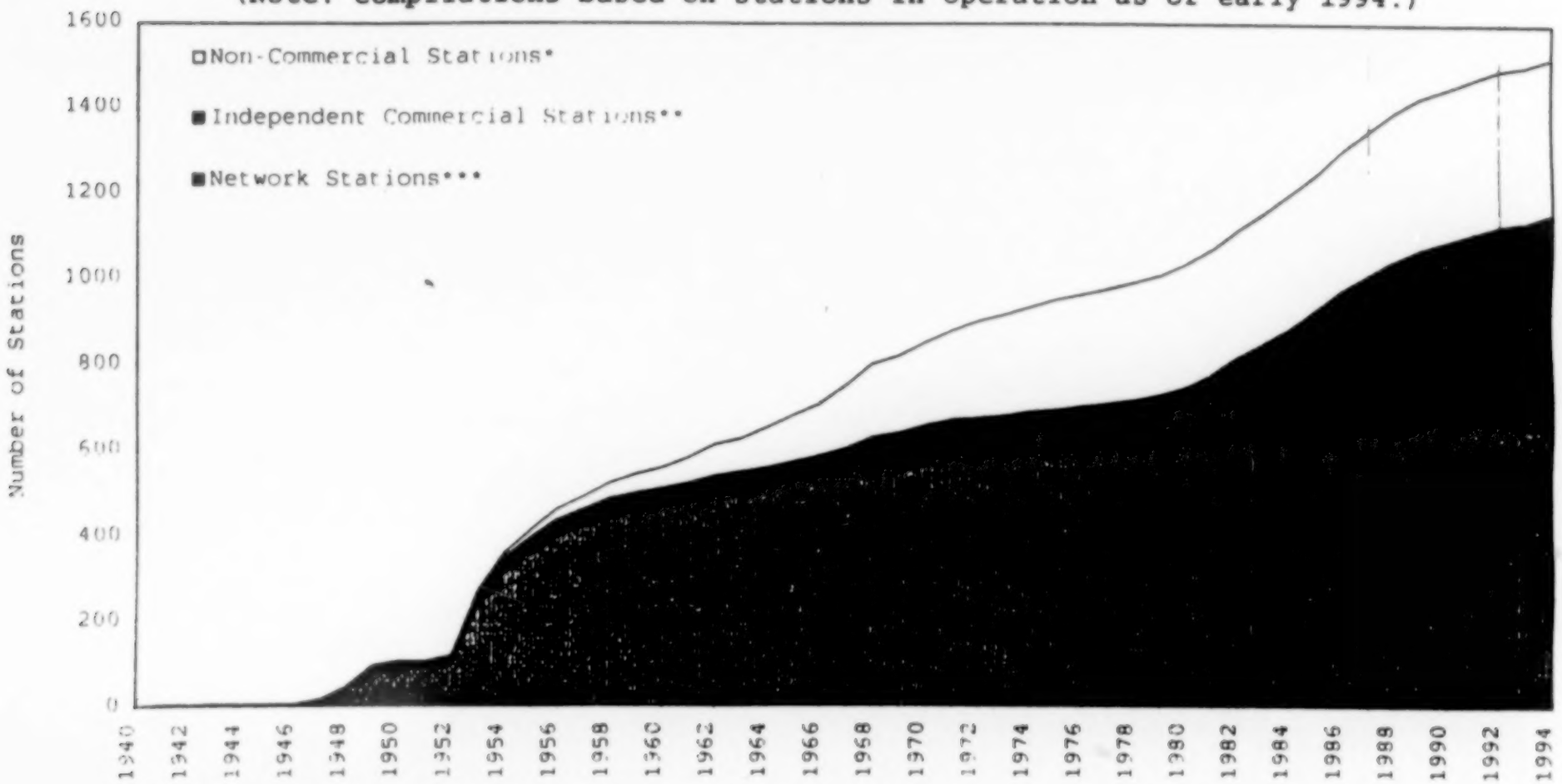


Notes:
The Factbook reports data as of January 1st of each year, but the data are given here as the year-end total for the previous year. Vertical lines are placed at the initiation of must-carry rules in 1965, the voiding of must carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Source:
Television & Cable Factbook, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. A-7.

Exhibit 8

Number of Broadcast Television Stations, by Affiliation
1940 - 1994
(Note: Compilations based on stations in operation as of early 1994.)

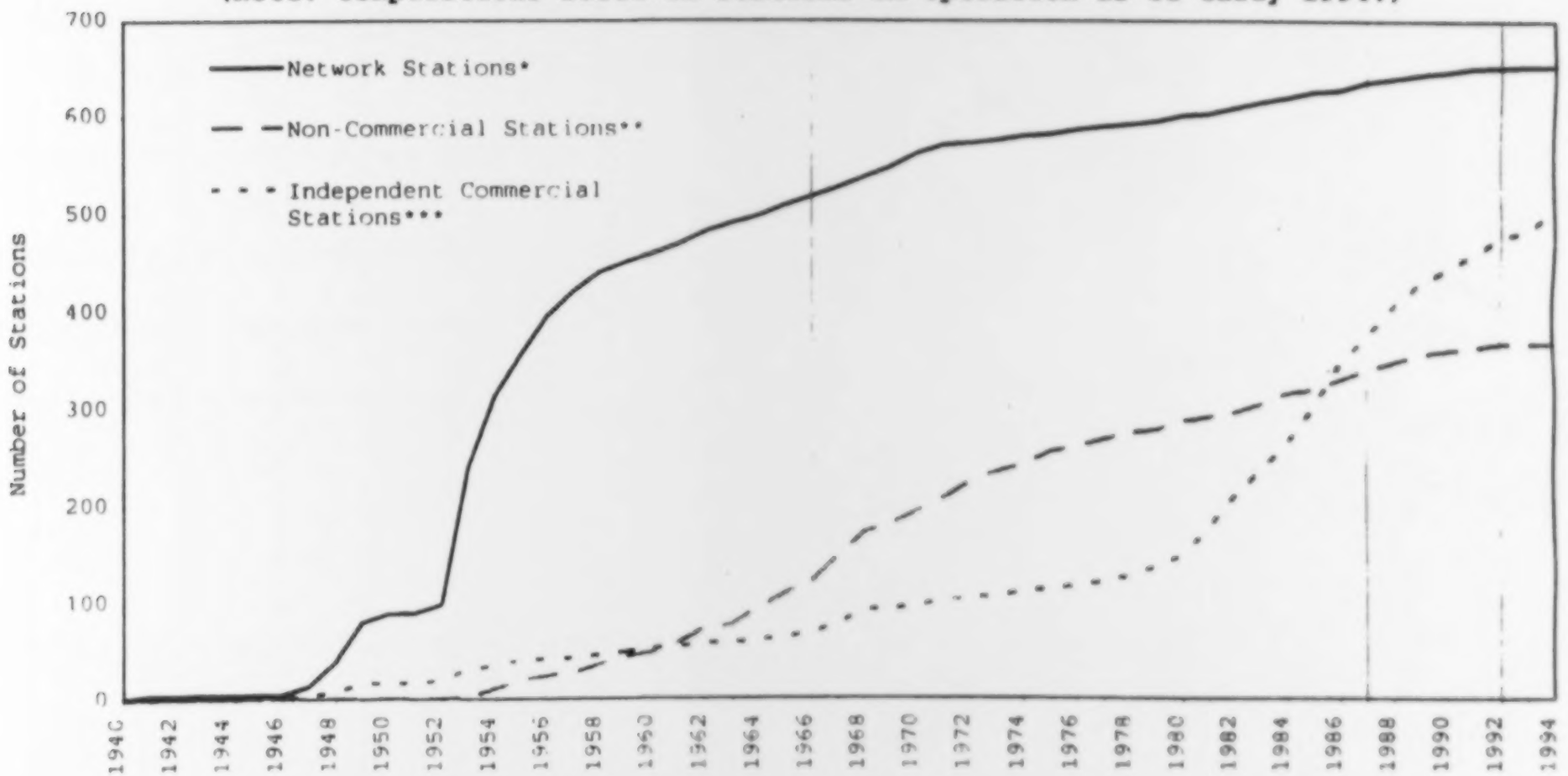


Notes:
* Includes public and educational stations.
** Includes independents and Fox affiliates.
*** Includes affiliates of ABC, CBS, NBC and joint network/Fox stations.
Vertical lines are placed at the initiation of must-carry rules in 1966, the voiding of must carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Sources:
Television station data obtained from Warren Publishing, Inc., Washington, D.C.
Date of operation data compiled from *Television & Cable Factbook*, Stations Volume No. 61, Warren Publishing, Inc., Washington, D.C., 1995, pp. A-15-A-1146.

Exhibit 9

Number of Broadcast Television Stations, by Affiliation
1940 - 1994
(Note: Compilations based on stations in operation as of early 1994.)



Notes:
* Includes public and educational stations.
** Includes independents and Fox affiliates.
*** Includes affiliates of ABC, CBS, NBC and joint network Fox stations.
Vertical lines are placed at the initiation of must-carry rules in 1966, the voiding of must-carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Sources:
Television station data obtained from Warren Publishing, Inc., Washington, D.C.
Date of operation data compiled from *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, pp. A-16-A-1346.

Exhibit 10

Annual Change in the Number of Broadcast Television Stations, 1954 - 1994[1,2,3]
(Note: Compilations based on stations in operation as of early 1994.)

YEAR	VHF					UHF					Total VHF and UHF				
	Commercial			Non-Commercial[4]	Total	Commercial			Non-Commercial[4]	Total	Commercial			Non-Commercial[4]	Total
	Network[5] [1]	Indep[5] [2]	Total [3]	[4]	[5]	Network[5] [6]	Indep[5] [7]	Total [8]	[9]	[10]	Network[5] [11]	Indep[5] [12]	Total [13]	[14]	[15]
1954	65	2	67	6	73	8	2	10	3	13	73	4	77	9	86
1955	41	4	45	7	52	2	1	3	1	4	43	5	48	8	56
1956	38	2	40	4	44	2	0	2	1	3	40	2	42	5	47
1957	21	0	21	4	25	4	0	4	0	4	25	0	25	4	29
1958	19	4	23	6	29	1	0	1	2	3	20	4	24	8	32
1959	6	1	7	5	12	4	2	6	3	9	10	3	13	8	21
1960	8	2	10	3	13	0	1	1	1	2	8	3	11	4	15
1961	6	0	6	7	13	4	2	6	4	10	10	2	12	11	23
1962	11	1	12	5	17	2	2	4	9	13	13	3	16	14	30
1963	8	0	8	3	11	1	1	2	1	3	9	1	10	4	14
1964	6	0	6	7	13	1	2	3	10	13	7	2	9	17	26
1965	6	0	6	6	12	5	3	8	9	17	11	3	14	15	29
1966	5	0	5	6	11	4	5	9	6	15	9	5	14	12	26
1967	5	2	7	4	11	4	7	11	22	33	9	9	18	26	44
1968	1	1	2	4	6	10	14	24	21	45	11	15	26	25	51
1969	3	0	3	1	4	7	1	8	7	15	10	1	11	8	19
1970	3	0	3	7	10	11	3	14	7	21	14	3	17	14	31
1971	0	0	0	5	5	9	5	14	9	23	9	5	14	14	28
1972	2	0	2	3	5	0	3	3	14	17	2	3	5	17	22
1973	2	0	2	0	2	1	2	3	10	13	3	2	5	10	15
1974	2	0	2	4	6	2	5	7	4	11	4	5	9	8	17
1975	1	0	1	2	3	1	3	4	11	15	2	3	5	13	18
1976	4	0	4	4	8	1	3	4	1	5	5	3	8	5	13
1977	2	0	2	2	4	1	4	5	5	10	3	4	7	7	14
1978	0	1	1	4	5	2	5	7	3	10	2	6	8	7	15
1979	1	0	1	1	2	2	10	12	2	14	3	10	13	3	16
1980	1	0	1	4	5	5	11	16	5	21	6	11	17	9	26
1981	0	2	2	0	2	2	27	29	4	33	2	29	31	4	35
1982	1	2	3	2	5	5	31	36	3	39	6	33	39	5	44
1983	0	4	4	3	7	6	22	28	5	33	6	26	32	8	40
1984	3	2	5	1	6	2	26	28	10	38	5	28	33	11	44
1985	0	2	2	0	2	6	35	41	4	45	6	37	43	4	47
1986	1	1	2	1	3	1	43	44	9	53	3	44	46	10	56
1987	2	0	2	0	2	6	28	34	10	44	8	28	36	10	46
1988	2	4	6	2	8	2	27	29	6	35	4	31	35	8	43
1989	0	1	1	1	2	4	23	27	7	34	4	24	28	8	36
1990	1	2	3	0	3	2	12	14	4	18	3	14	17	4	21
1991	1	2	3	0	3	3	14	17	3	20	4	16	20	3	23
1992	0	1	1	1	2	1	16	17	3	20	1	17	18	4	22
1993	1	0	1	0	1	0	8	8	0	8	1	8	9	0	9
1994	0	1	1	0	1	0	19	19	0	19	0	20	20	0	20
Average Annual Change (1980-1992)	0.9	1.8	2.7	1.2	3.8	3.5	24.2	27.7	5.6	33.3	4.4	26.0	30.4	6.8	37.2

Exhibit 11

Change in the Number of Commercial Stations by ADI [1]

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
1	New York	11	14	14	3	0	3
2	Los Angeles [2]	14	16	17	2	1	3
3	Chicago	9	12	13	3	1	4
4	Philadelphia	11	11	13	0	2	2
5	San Francisco	13	16	17	3	1	4
6	Boston	9	15	13	6	−2	4
7	Washington, DC	7	7	8	0	1	1
8	Dallas-Fort Worth, TX	8	11	13	3	2	5
9	Detroit	7	7	8	0	1	1
10	Atlanta	7	7	10	0	3	3
11	Houston, TX	5	8	11	3	3	6
12	Cleveland	7	10	11	3	1	4
13	Minneapolis-St. Paul	6	11	11	5	0	5
14	Seattle-Tacoma, WA	6	8	9	2	1	3
15	Miami	7	9	10	2	1	3
16	Tampa-St. Petersburg	6	7	9	1	2	3
17	Pittsburgh	6	6	6	0	0	0
18	St. Louis	5	7	8	2	1	3
19	Sacramento-Stockton	6	7	8	1	1	2
20	Phoenix	7	9	10	2	1	3
21	Denver	4	8	12	4	4	8

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
22	Baltimore	4	6	6	2	0	2
23	Orlando-Daytona Beach-Melbourne	4	8	9	4	1	5
24	Hartford-New Haven	5	7	6	2	−1	1
25	San Diego	3	5	5	2	0	2
26	Portland, OR	5	6	8	1	2	3
27	Indianapolis	5	8	10	3	2	5
28	Kansas City	5	6	7	1	1	2
29	Milwaukee, WI	5	6	9	1	3	4
30	Charlotte	5	6	6	1	0	1
31	Cincinnati	5	5	5	0	0	0
32	Raleigh-Durham	5	6	8	1	2	3
33	Nashville, TN	4	6	8	2	2	4
34	Columbus, OH	4	6	6	2	0	2
35	Greenville-Spartanburg, SC-Asheville, NC [3]	6	8	8	2	0	2
36	San Antonio-Victoria, TX	5	8	10	3	2	5
37	Grand Rapids-Kalamazoo-Battle Creek	4	7	7	3	0	3
38	Buffalo	4	5	5	1	0	1
39	Norfolk-Portsmouth-Newport News-Hampton, VA	5	5	6	0	1	1
40	New Orleans	4	5	5	1	0	1
41	Salt Lake City, UT	4	5	8	1	3	4
42	Memphis, TN	4	5	6	1	1	2
43	Providence, RI-New Bedford, MA	4	5	5	1	0	1
44	Harrisburg-York-Lancaster-Lebanon	6	6	6	0	0	0
45	Oklahoma City	7	7	7	0	0	0

45	West Palm Beach-Fort Pierce-Vero Beach	3	4	5	1	1	2
47	Louisville	4	6	6	2	0	2
48	Greensboro-Winston Salem-High Point	5	8	8	3	0	3
49	Birmingham	3	7	7	4	0	4
50	Wilkes Barre-Scranton	3	5	5	2	0	2
51	Albuquerque	9	14	15	5	1	6
52	Albany-Schenectady-Troy	4	6	6	2	0	2
53	Dayton	4	6	6	2	0	2
54	Jacksonville	5	5	6	0	1	1
55	Charleston-Huntington, WV	3	5	5	2	0	2
56	Fresno-Visalia	6	7	9	1	2	3
57	Flint-Saginaw-Bay City	3	5	5	2	0	2
58	Little Rock	3	6	6	3	0	3
59	Tulsa	5	7	7	2	0	2
60	Richmond, VA	3	5	5	2	0	2
61	Wichita-Hutchinson	10	12	13	2	1	3
62	Knoxville, TN	4	5	6	1	1	2
63	Mobile, AL-Pensacola, FL	3	9	8	6	−1	5
64	Toledo	3	5	5	2	0	2
65	Green Bay-Appleton	5	7	7	2	0	2
66	Austin, TX	3	4	5	1	1	2
67	Roanoke-Lynchburg, VA	3	6	6	3	0	3
68	Syracuse	3	4	5	1	1	2
69	Rochester, NY	4	4	4	0	0	0
70	Des Moines	3	4	4	1	0	1
71	Shreveport, LA-Texarkana, TX	3	4	4	1	0	1
72	Lexington	4	6	6	2	0	2
73	Omaha	3	4	4	1	0	1
74	Springfield-Decatur-Champaign	5	8	8	3	0	3

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
75	Portland-Poland Spring	3	4	4	1	0	1
76	Paducah, KY-Cape Girardeau, MO-Harrisburg-Marion, IL	5	6	6	1	0	1
77	Las Vegas	4	5	7	1	2	3
78	Springfield, MO	3	4	4	1	0	1
79	Tucson [4]	4	6	6	2	0	2
80	Spokane, WA	3	6	5	3	−1	2
81	Huntsville-Decatur-Florence	4	6	6	2	0	2
82	Cedar Rapids-Waterloo-Dubuque	4	4	5	0	1	1
83	South Bend-Elkhart	4	4	4	0	0	0
84	Davenport, IA-Rock Island-Moline, IL	3	4	5	1	1	2
85	Chattanooga, TN	4	5	5	1	0	1
86	Columbia, SC	4	4	4	0	0	0
87	Jackson, MS [5]	3	5	5	2	0	2
88	Fort Meyers-Naples	3	4	5	1	1	2
89	Johnstown-Altoona	4	6	5	2	−1	1
90	Bristol, VA-Kingsport-Johnson City, TN	3	4	4	1	0	1
91	Madison, WI	3	4	4	1	0	1
92	Youngstown	3	3	3	0	0	0
93	Burlington, VT-Plattsburgh, NY	4	4	4	0	0	0
94	Evansville	3	5	5	2	0	2
95	Baton Rouge	3	3	4	0	1	1
96	Waco-Temple, TX	3	4	5	1	1	2
97	Springfield, MA	2	2	2	0	0	0
98	Colorado Springs-Pueblo	3	4	4	1	0	1

99	Lincoln-Hastings-Kearney	7	7	7	0	0	0
100	El Paso	4	6	7	2	1	3
101	Fort Wayne	4	5	5	1	0	1
102	Savannah	3	4	5	1	1	2
103	Greenville-New Bern-Washington	3	3	5	0	2	2
104	Lansing	2	2	4	1	1	2
105	Charleston, SC	3	4	4	1	0	1
106	Peoria-Bloomington	3	4	4	1	0	1
107	Sioux Falls-Mitchell, SD	7	8	9	1	1	2
108	Fargo	4	7	8	3	1	4
109	Santa Barbara-Santa Maria-San Luis Obispo	3	4	5	1	1	2
110	Montgomery-Selma	4	5	5	1	0	1
111	Augusta	3	3	4	0	1	1
112	Tyler-Longview, TX	2	4	5	2	1	3
113	Salinas-Monterey	3	4	4	1	0	1
114	McAllen-Brownsville, TX	3	3	3	0	0	0
115	Tallahassee, FL-Thomasville, GA	3	4	5	1	1	2
116	Reno	4	5	5	1	0	1
117	Fort Smith	4	4	4	0	0	0
118	Lafayette, LA	3	3	3	0	0	0
119	Traverse City-Cadillac	6	6	8	0	2	2
120	Macon	2	3	4	1	1	2
121	Columbus, GA	3	5	5	2	0	2
122	Columbus-Tupelo	2	3	3	1	0	1
123	Corups Christi, TX	4	4	4	0	0	0
124	Eugene	4	5	8	1	3	4
125	Duluth, MN-Superior, WI	4	4	4	0	0	0
126	La Crosse-Eau Claire, WI	4	5	5	1	0	1
127	Yakima, WA	7	7	7	0	0	0
128	Amarillo, TX	5	6	6	1	0	1

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
129	Monroe, LA-El Dorado, AR	3	4	4	1	0	1
130	Chico-Redding	2	3	4	1	1	2
131	Bakersfield	3	3	4	0	1	1
132	Wausau-Rhinelander, WI	3	3	3	0	0	0
133	Boise	4	4	4	0	0	0
134	Binghamton	3	3	3	0	0	0
135	Wichita Falls, TX-Lawton, OK	3	4	4	1	0	1
136	Rockford	4	4	4	0	0	0
137	Topeka	2	3	3	1	0	1
138	Terre Haute	3	3	3	0	0	0
139	Florence, SC	2	3	3	1	0	1
140	Beaumont-Port Arthur, TX	3	3	3	0	0	0
141	Sioux City	3	3	3	0	0	0
142	Wheeling, WV-Steubenville, OH	2	2	2	0	0	0
143	Erie	3	4	4	1	0	1
144	Wilmington	2	3	3	1	0	1
145	Medford	3	4	5	1	1	2
146	Joplin, MO-Pittsburg, KS	3	3	4	0	1	1
147	Rochester, MN-Mason City, IA-Austin, MN	3	4	4	1	0	1
148	Bluefield-Beckley-Oak Hill, WV	2	2	2	0	0	0
149	Lubbock, TX	4	4	4	0	0	0
150	Minot-Bismarck-Dickinson, ND-Glendive, MT	9	11	11	2	0	2
151	Columbia-Jefferson City	3	4	4	1	0	1
152	Odessa-Midland, TX	4	5	6	1	1	2
153	Sarasota	1	1	2	0	1	1

154	Albany, GA	1	2	3	1	1	2
155	Bangor	3	3	3	0	0	0
156	Abilene-Sweetwater, TX	3	3	3	0	0	0
157	Idaho Falls-Pocatello	3	3	3	0	0	0
158	Biloxi-Gulfport-Pascagoula	1	2	2	1	0	1
159	Quincy, IL-Hannibal, MO	2	3	3	1	0	1
160	Utica	2	3	3	1	0	1
161	Clarksburg-Weston, WV	3	3	3	0	0	0
162	Salisbury	2	2	2	0	0	0
163	Panama City	2	2	3	0	1	1
164	Gainesville	1	2	2	1	0	1
165	Laurel-Hattiesburg	1	2	2	1	0	1
166	Palm Springs	2	2	2	0	0	0
167	Dothan	2	2	3	0	1	1
168	Watertown-Carthage	1	1	2	0	1	1
169	Rapid City, SD	5	5	6	0	1	1
170	Elmira	2	2	2	0	0	0
171	Alexandria, LA	1	2	2	1	0	1
172	Harrisonburg, VA	1	1	1	0	0	0
173	Billings-Hardin	4	4	4	0	0	0
174	Jonesboro	1	1	1	0	0	0
175	Lake Charles	1	2	2	1	0	1
176	Missoula	3	3	4	0	1	1
177	Ardmore-Ada	2	2	2	0	0	0
178	Greenwood-Greenville	2	2	2	0	0	0
179	El Centro, CA-Yuma, AZ	2	2	3	0	1	1
180	Meridian	2	3	3	1	0	1
181	Jackson, TN	1	2	2	1	0	1
182	Great Falls	2	3	3	1	0	1
183	Grand Junction-Durango	4	4	4	0	0	0

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
184	Parkersburg, WV	1	1	1	0	0	0
185	Tuscaloosa	1	2	2	1	0	1
186	Eureka	2	3	3	1	0	1
187	Marquette	1	1	1	0	0	0
188	San Angelo, TX	2	3	3	1	0	1
189	Butte	2	3	3	1	0	1
190	Lafayette	1	1	1	0	0	0
191	Bowling Green	1	1	2	0	1	1
192	Hagerstown	1	2	2	1	0	1
193	St. Joseph	1	2	2	1	0	1
194	Anniston	1	1	1	0	0	0
195	Cheyenne, WY-Scottsbluff, NE-Sterling, CO	4	5	5	1	0	1
196	Charlottesville, VA	1	1	1	0	0	0
197	Casper-Riverton, WY	4	6	6	2	0	2
198	Laredo, TX	2	3	3	1	0	1
198	Lima	1	2	2	1	0	1
200	Ottumwa, IA-Kirksville, MO	1	2	2	1	0	1
201	Twin Falls	1	1	2	0	1	1
202	Zanesville	1	1	1	0	0	0
203	Presque Isle	1	1	1	0	0	0
204	Bend	1	1	1	0	0	0
205	Mankato	1	1	1	0	0	0
206	Flagstaff	1	1	2	0	1	1
207	Helena	1	1	1	0	0	0
208	North Platte	1	1	1	0	0	0
209	Alpena	1	1	1	0	0	0
500	Anchorage	3	4	6	1	2	3
500	Bethel	0	0	0	0	0	0
500	Fairbanks	2	2	2	0	0	0
500	Juneau	1	1	1	0	0	0
500	North Pole	1	1	1	0	0	0
500	Sitka	1	1	1	0	0	0
501	Hilo	3	4	5	1	1	2
501	Honolulu	4	7	9	3	2	5
501	Kailua-Knoa	0	0	1	0	1	1
501	Wailuku	3	3	4	0	1	1
502	Agana, GU	1	1	1	0	0	0
502	Tamuning, GU	0	1	1	1	0	1
503	Aguadilla, PR	2	2	2	0	0	0
503	Arecibo, PR	0	1	1	1	0	1
503	Bayamon, PR	0	0	1	0	1	1
503	Caguas, PR	1	1	1	0	0	0
503	Fajardo, PR	0	1	1	1	0	1
503	Mayaguez, PR	1	3	3	2	0	2
503	Naranjito, PR	0	0	1	0	1	1
503	Ponce, PR	2	4	4	2	0	2
503	San Juan, PR	2	5	5	3	0	3
503	San Sebastian, PR	0	1	1	1	0	1
503	Yauco, PR	0	0	1	0	1	1
504	Charlotte Amalie, VI	1	1	1	0	0	0
504	Christiansted, VI	1	1	1	0	0	0

Notes

[1] Stations that were temporarily off the air during either 1981, 1987, or 1992 are considered to be in operation during those years for the purposes of this table. Stations that changed ADI between 1981 and 1992 are considered to have left their original ADI and entered their new ADI in this table. All occurance of these two cases are noted in the table

[2] Station KHSC was off the air from 1973 to 1984

[3] Station WASV appears ot have been off the air in 1988, although it was broadcasting again in 1992

[4] Station KPOL was off the air from October 1989 to July 1994

[5] Station WNTZ was off the air from 1988 through the end of 1992

Sources

Television & Cable Factbook • Stations volume No. 50, Warren Publishing Inc., Washington, D.C., 1981-82
Television & Cable Factbook • Stations volume No. 56, Warren Publishing Inc., Washington, D.C. 1988
Television & Cable Factbook • Stations volume No. 61, Warren Publishing Inc., Washington, D.C. 1993
Television & Cable Factbook • Stations volume No. 62, Warren Publishing Inc., Washington, D.C., 1994
Television & Cable Factbook • Stations volume No. 63, Warren Publishing Inc., Washington, D.C., 1995

Exhibit 11

Change in the Number of Non-Commercial Television Stations by ADI [1]

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
1	New York	7	7	7	0	0	0
2	Los Angeles	4	5	4	1	−1	0
3	Chicago	3	3	3	0	0	0
4	Philadelphia	4	4	5	0	1	1
5	San Francisco	4	5	5	1	0	1
6	Boston	4	4	4	0	0	0
7	Washington, DC	3	5	5	2	0	2
8	Dallas-Fort Worth, TX	1	1	2	0	1	1
9	Detroit	1	1	1	0	0	0
10	Atlanta	2	2	2	0	0	0
11	Houston, TX	1	2	3	1	1	2
12	Cleveland	3	3	3	0	0	0
13	Minneapolis-St. Paul	5	5	6	0	1	1
14	Seattle-Tacoma, WA	2	3	3	1	0	1
15	Miami	2	2	2	0	0	0
16	Tampa-St. Petersburg	2	2	2	0	0	0
17	Pittsburgh	3	4	4	1	0	1
18	St. Louis	1	1	1	0	0	0
19	Sacramento-Stockton	1	2	2	1	0	1
20	Phoenix	1	1	1	0	0	0

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
21	Denver	2	2	3	0	1	1
22	Baltimore	2	2	2	0	0	0
23	Orlando-Daytona Beach-Melbourne	1	2	3	1	1	2
24	Hartford-New Haven	3	3	3	0	0	0
25	San Diego	1	1	1	0	0	0
26	Portland, OR	4	3	3	−1	0	−1
27	Indianapolis	3	3	4	0	1	1
28	Kansas City	2	2	2	0	0	0
29	Milwaukee, WI	2	2	2	0	0	0
30	Charlotte	3	3	3	0	0	0
31	Cincinnati	4	4	4	0	0	0
32	Raleigh-Durham	1	2	2	1	0	1
33	Nashville, TN	2	2	2	0	0	0
34	Columbus, OH	1	1	1	0	0	0
35	Greenville-Spartanburg, SC-Asheville, NC	3	4	4	1	0	1
36	San Antonio-Victoria, TX	1	1	2	0	1	1
37	Grand Rapids-Kalamazoo-Battle Creek	1	2	2	1	0	1
38	Buffalo	1	2	2	1	0	1
39	Norfolk-Portsmouth-Newport News-Hampton, VA	1	1	1	0	0	0
40	New Orleans	1	2	2	1	0	1
41	Salt Lake City, UT	2	3	3	1	0	1
42	Memphis, TN	2	2	2	0	0	0
43	Providence, RI-New Bedford, MA	1	1	1	0	0	0
44	Harrisburg-York-Lancaster-Lebanon	1	1	1	0	0	0
45	Oklahoma City	2	2	3	0	1	1

45	West Palm Beach-Fort Pierce-Vero Beach	0	1	2	1	1	2
47	Louisville	3	3	3	0	0	0
48	Greensboro-Winston Salem-High Point	1	1	1	0	0	0
49	Birmingham	2	2	2	0	0	0
50	Wilkes Barre-Scranton	1	1	1	0	0	0
51	Albuquerque	2	3	3	1	0	1
52	Albany-Schenectady-Troy	1	2	2	1	0	1
53	Dayton	1	1	1	0	0	0
54	Jacksonville	1	1	2	0	1	1
55	Charleston-Huntington, WV	5	5	5	0	0	0
56	Fresno-Visalia	1	2	2	1	0	1
57	Flint-Saginaw-Bay City	3	4	4	1	0	1
58	Little Rock	3	4	4	1	0	1
59	Tulsa	2	3	3	1	0	1
60	Richmond, VA	2	2	2	0	0	0
61	Wichita-Hutchinson	1	2	3	1	1	2
62	Knoxville, TN	1	1	2	0	1	1
63	Mobile, AL-Pensacola, FL	2	2	2	0	0	0
64	Toledo [4]	1	2	2	1	0	1
65	Green-Bay Appleton	1	1	1	0	0	0
66	Austin, TX	1	1	1	0	0	0
67	Roanoke-Lynchburg, VA	1	1	1	0	0	0
68	Syracuse	1	1	1	0	0	0
69	Rochester, NY	1	1	1	0	0	0
70	Des Moines	2	2	2	0	0	0
71	Shreveport, LA-Texarkana, TX	1	1	1	0	0	0
72	Lexington	4	4	4	0	0	0
73	Omaha	3	3	3	0	0	0
74	Springfield-Decatur-Champaign	1	3	3	2	0	2

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
75	Portland-Poland Spring	3	2	2	−1	0	−1
76	Paducah, KY-Cape Girardeau, MO-Harrisburg-Marion, IL	3	3	3	0	0	0
77	Las Vegas	1	1	1	0	0	0
78	Springfield, MO	1	1	1	0	0	0
79	Tucson	1	1	2	0	1	1
80	Spokane, WA	3	3	4	0	1	1
81	Huntsville-Decatur-Florence	2	2	2	0	0	0
82	Cedar Rapids-Waterloo-Dubuque	2	2	2	0	0	0
83	South Bend-Elkhart	1	1	1	0	0	0
84	Davenport, IA-Rock Island-Moline, IL	0	1	2	1	1	2
85	Chattanooga, TN	2	2	2	0	0	0
86	Columbia, SC	2	2	2	0	0	0
87	Jackson, MS	2	2	2	0	0	0
88	Fort Meyers-Naples	0	1	1	1	0	1
89	Johnstown-Altoona	1	1	1	0	0	0
90	Bristol, VA-Kingsport-Johnson City, TN	3	3	3	0	0	0
91	Madison, WI	1	1	1	0	0	0
92	Youngstown	0	0	0	0	0	0
93	Burlington, VT-Plattsburgh, NY	7	7	6	0	−1	1
94	Evansville	3	3	3	0	0	0
95	Baton Rouge	1	1	1	0	0	0
96	Waco-Temple, TX	2	2	3	0	1	1
97	Springfield, MA	1	1	1	0	0	0
98	Colorado Springs-Pueblo	1	1	1	0	0	0
99	Lincoln-Hastings-Kearney	4	4	4	0	0	0

100	El Paso	2	2	3	0	1	1
101	Fort Wayne	0	1	1	1	0	1
102	Savannah	2	2	2	0	0	0
103	Greenville-New Bern-Washington	2	3	3	1	0	1
104	Lansing	1	1	1	0	0	0
105	Charleston, SC	1	1	1	0	0	0
106	Peoria-Bloomington	1	1	1	0	0	0
107	Sioux Falls-Mitchell, SD	5	5	5	0	0	0
108	Fargo	2	2	3	0	1	1
109	Santa Barbara-Santa Maria-San Luis Obispo	0	0	0	0	0	0
110	Montgomery-Selma	3	3	3	0	0	0
111	Augusta	2	2	2	0	0	0
112	Tyler-Longview, TX	0	0	0	0	0	0
113	Salinas-Monterey	0	0	1	0	1	1
114	McAllen-Brownsville, TX	0	2	2	2	0	2
115	Tallahassee, FL-Thomasville, GA	2	2	2	0	0	0
116	Reno	0	1	1	1	0	1
117	Fort Smith	1	1	1	0	0	0
118	Lafayette, LA	1	1	1	0	0	0
119	Traverse City-Cadillac	0	2	2	2	0	2
120	Macon	1	1	1	0	0	0
121	Columbus, GA	2	2	2	0	0	0
122	Columbus-Tupelo	2	2	2	0	0	0
123	Corpus Christi, TX	1	1	1	0	0	0
124	Eugene	0	0	1	0	1	1
125	Duluth, MN-Superior, WI	1	1	1	0	0	0
126	La Cross-Eau Claire, WI	1	1	1	0	0	0
127	Yakima, WA	1	2	2	1	0	1

Rank	ADI	Number of Stations			Change in Number of Stations		
		1981	1987	1992	1981-1987	1987-1992	1981-1992
128	Amarillo, TX	0	0	1	0	1	1
129	Monroe, LA-El Dorado, AR	1	1	1	0	0	0
130	Chico-Redding	1	1	1	0	0	0
131	Bakersfield	0	0	0	0	0	0
132	Wausau-Rhinelander, WI	2	2	2	0	0	0
133	Boise	1	1	1	0	0	0
134	Binghamton	1	1	1	0	0	0
135	Wichita Falls, TX-Lawton, OK	1	0	0	−1	0	−1
136	Rockford	0	0	0	0	0	0
137	Topeka	1	1	1	0	0	0
138	Terre Haute	2	2	2	0	0	0
139	Florence, SC	2	2	2	0	0	0
140	Beaumont-Port Arthur, TX	0	1	1	1	0	1
141	Sioux City	3	3	3	0	0	0
142	Wheeling, WV-Steubenville, OH	1	1	1	0	0	0
143	Erie	1	1	1	0	0	0
144	Wilmington	1	1	1	0	0	0
145	Medford	1	1	2	0	1	1
146	Joplin, MO-Pittsburg, KS	0	1	1	1	0	1
147	Rochester, MN-Mason City, IA-Austin, MN	2	2	2	0	0	0
148	Bluefield-Beckley-Oak Hill, WV	1	1	1	0	0	0
148	Lubbock, TX	1	1	1	0	0	0
150	Minot-Bismarck-Dickinson, ND-Glendive, MT	2	4	4	2	0	2
151	Columbia-Jefferson City	0	0	0	0	0	0
152	Odessa-Midland, TX	0	1	1	1	0	1
153	Sarasota	0	0	0	0	0	0

154	Albany, GA	2	2	2	0	0	0
155	Bangor	2	2	2	0	0	0
156	Abilene-Sweetwater, TX	0	0	0	0	0	0
157	Idaho Falls-Pocatello	1	1	1	0	0	0
158	Biloxi-Gulfport-Pascagoula	1	1	1	0	0	0
159	Quincy, IL-Hannibal, MO	0	2	2	2	0	2
160	Utica	0	0	0	0	0	0
161	Clarksburg-Weston, WV	0	0	0	0	0	0
162	Salisbury	2	2	2	0	0	0
163	Panama City	0	0	1	0	1	1
164	Gainesville	1	1	1	0	0	0
165	Laurel-Hattiesburg	0	0	0	0	0	0
165	Palm Springs	0	0	0	0	0	0
167	Dothan	0	0	0	0	0	0
168	Watertown-Carthage	2	2	2	0	0	0
169	Rapid City, SD	4	4	4	0	0	0
170	Elmira	0	0	0	0	0	0
171	Alexandria, LA	0	1	1	1	0	1
172	Harrisonburg, VA	1	1	1	0	0	0
173	Billings-Hardin	0	0	0	0	0	0
174	Jonesboro	1	1	1	0	0	0
175	Lake Charles	1	1	1	0	0	0
176	Missoula	0	0	0	0	0	0
177	Ardmore-Ada	0	0	0	0	0	0
178	Greenwood-Greenville	1	1	1	0	0	0
179	El Centro, Ca-Yuma, AZ	0	0	0	0	0	0
180	Meridian	1	1	1	0	0	0
181	Jackson, TN	1	1	1	0	0	0
182	Great Falls	0	0	0	0	0	0

Rank	ADI	Change in Number of Stations				Number of Stations	
		1981	1987	1992	1981-1987	1987-1992	1981-1992
183	Grand Junction-Durango	0	0	0	0	0	0
184	Parkersburg, WV	0	0	0	0	0	0
185	Tuscaloosa	0	0	0	0	0	0
186	Eureka	1	1	1	0	0	0
186	Marquette	1	1	1	0	0	0
188	San Angelo, TX	0	0	0	0	0	0
189	Butte	0	1	1	1	0	1
190	Lafayette	0	0	0	0	0	0
191	Bowling Green	1	1	2	0	1	1
192	Hagerstown	1	1	1	0	0	0
193	St. Joseph	0	0	0	0	0	0
194	Anniston	0	0	0	0	0	0
195	Cheyenne, WY-Scottsbluff, NE-Sterling, CO	0	0	0	0	0	0
196	Charlottesville, VA	0	0	1	0	1	1
197	Casper-Riverton, WY	0	1	1	1	0	1
198	Laredo, TX	0	0	0	0	0	0
198	Lima [2]	1	0	0	−1	0	−1
200	Ottumwa, IA-Kirksville, MO	0	0	0	0	0	0
201	Twin Falls	0	0	1	0	1	1
202	Zanesville	0	0	0	0	0	0
203	Presque Isle	1	1	1	0	0	0
204	Bend	0	1	1	1	0	1
205	Mankato	0	0	0	0	0	0
206	Flagstaff	0	0	0	0	0	0
207	Helena	0	0	0	0	0	0
208	North Platte	1	1	1	0	0	0
209	Alpena	1	1	1	0	0	0
500	Anchorage	1	1	1	0	0	0
500	Bethel	1	1	1	0	0	0
500	Fairbanks	1	1	1	0	0	0
500	Juneau	1	1	1	0	0	0
500	North Pole	0	0	0	0	0	0
500	Sitka	0	0	0	0	0	0
501	Hilo	0	0	0	0	0	0
501	Honolulu	1	1	1	0	0	0
501	Kailua-Knoa	0	0	0	0	0	0
501	Wailuku	1	1	1	0	0	0
502	Agana, GU	1	1	1	0	0	0
502	Tamuning, GU	0	0	0	0	0	0
503	Aguadilla, PR	0	1	1	1	0	1
503	Arecibo, PR	0	0	0	0	0	0
503	Bayamon, PR	0	0	0	0	0	0
503	Caguas, PR	0	1	1	1	0	1
503	Fajardo, PR	0	1	1	1	0	1
503	Mayaguez, PR	1	1	1	0	0	0
503	Naranjito, PR	0	0	0	0	0	0
503	Ponce, PR	0	1	1	1	0	1
503	San Juan, PR	1	1	1	0	0	0
503	San Sebastian, PR	0	0	0	0	0	0
503	Yauco, PR	0	0	0	0	0	0
504	Charlotte Amalie, VI	1	1	1	0	0	0
504	Christiansted, VI	0	0	0	0	0	0

Notes

[1] Stations that were temporarily off the air during either 1981, 1987 or 1992 are considered to be in operation during those years for the purposes of this table. Stations that changed ADI's between 1981 and 1992 are considered to have left their original ADI and entered their new ADI in this table. All occurences of these two cases are noted in the table

[2] Station KOAB switched from the Portland, OR ADIto the Bend, OR ADI sometimes between 1981 and 1987 due to a relocation.

[3] Station WMHX was off the air from 1991 to 1993.

[4] Station WBSU switched from the Lima, OH ADI to the Toledo, OH ADI due to a channel change in 1983.

Sources

Television & Cable Factbook • Stations Volume No. 50, Warren Publishing Inc., Washington, D.C., 1981-82
Television & Cable Factbook • Stations Volume No. 56, Warren Publishing Inc., Washington, D.C., 1988
Television & Cable Factbook • Stations Volume No. 61, Warren Publishing Inc., Washington, D.C., 1993
Television & Cable Factbook • Stations Volume No. 62, Warren Publishing Inc., Washington, D.C., 1994
Television & Cable Factbook • Stations Volume No. 63, Warren Publishing Inc., Washington, D.C., 1995

[ATTACHMENT A]

CURRICULUM VITAE OF STANLEY M. BESEN —

* * * *

[ATTACHMENT B]

DESCRIPTION OF DATA SOURCES FOR ANALYSIS OF CABLE SYSTEM CARRIAGE OF BROADCAST TELEVISION STATIONS

I. Channel Lineups for Sample of Cable Systems

The analysis of cable system carriage of broadcast television stations was carried out using, alternatively, two different samples of cable system channel lineups. The first sample is based on a survey of cable systems conducted by Economists, Inc. in 1992. The second sample is based on the survey of cable systems conducted by Arthur D. Little in 1994/95 for this proceeding. Each is discussed in turn below.

A. Economists, Inc. Sample

Channel lineup cards for a sample of 272 cable systems were obtained from an October 1992 survey conducted by Economists, Inc. (EI) on behalf of the National Cable Television Association (NCTA). The cable systems were drawn from the same sample of 340 cable systems surveyed by J.N. Dertouzos and S.S. Wildman for a study they prepared in 1990.[1]

Dertouzos and Wildman used a sample design based on stratification by system size (number of basic subscribers). Because the size distribution of cable systems is highly skewed toward systems with a small number of subscribers, a random sample of cable systems would not be representative of the situation faced by most subscribers. By oversampling the larger systems, one can obtain estimates

[1] See J.N. Dertouzos and S.S. Wildman, "Competitive Effects of Broadcast Signals on Cable," prepared for the National Cable Television Association, February 22, 1990. The remaining 68 systems in the Dertouzos-Wildman sample apparently did not respond to the Economists, Inc. survey.

that are more representative. The sampling distribution is shown in Exhibit B-1.

The lineup cards indicate which services were being carried as of approximately mid-1992. Cable systems from this survey are identified by their Nielsen Cable On-Line Data Exchange (CODE) headend ID number.[2] These Nielsen cable identification numbers and the call letters for the over-the-air broadcast stations[3] carried by these systems at the time of the survey were keypunched by Charles River Associates (CRA).

In order to use these data for further analysis, the broadcast station call letters from the channel lineup cards had to be matched with a list of all broadcast stations operating in 1992.[4] Not all of the call letters from the lineup cards were found in the list of all operating stations. Further research indicated that: (1) some stations had changed call letters; and, (2) some of the channel lineup cards contained typographical errors in listing call letters.[5] In both cases, the call letters from the channel lineup data were revised to reflect the call letters as they appeared in

[2] There were several cable systems that submitted more than one channel lineup card in response to the EI survey. In these cases, the lineup card corresponding most closely to the area served by the Nielsen CODE headend was used.

[3] Satellite-delivered "superstations" were included only if the Grade B contour of the station encompassed the cable system as determined from contour maps published in the Factbook.

[4] The latter was taken from the *1993 Television & Cable Factbook* ("*Factbook*"), Stations Volume No. 61 (Warren Publishing, Inc., Washington, DC, 1993), pp. A19-A1289; A1317-A1395, and is discussed in more detail below.

[5] If the station had the same over-the-air channel number assignment in both the lineup card and the *Factbook*, but the call letters differed only by one letter or by the transposition of two letters, it was then assumed that the lineup card contained a typographical error.

the *Factbook*. Revisions were made in the call letters of 23 stations.

Nineteen other stations in the channel lineup data did not match with information in the *Factbook* and could not be attributed to a change in call letters or a typographical error. These were deleted from the channel lineup data.[6] To the extent that these stations represent local full-power broadcast television stations that were carried by the corresponding cable system, their deletion from my sample will cause me to understate the extent of carriage of local broadcast stations in the absence of must carry.

The database of cable systems and the broadcast signals they carried in the absence of must carry, created in the manner just described, is shown in Exhibit B-2.

The total number of stations carried by the 272 cable systems in the sample was 2,225.[7] Thus, each cable system carried, in the absence of must carry regulation, an average of 8.2 broadcast television stations.[8] Furthermore, no cable system in the sample carried fewer than two broadcast stations, and 94 percent of the systems carried at least five stations. Over half of the systems carried at least eight stations. Exhibit B-3 lists the frequency distribution of the number of stations carried.

Of the average of 8.2 stations carried on a cable system, 6 are from the same Arbitron Area of Dominant Influence (ADI) as the cable system and 2.2 are from an

[6] In many cases, these appear to be local access channels.

[7] This count does not include satellite-delivered "superstations" such as WTBS, WWOR, WGN, and others, unless they are receivable over the air by the cable system in question. It does include duplicate network affiliates.

[8] This average for the cable systems in the sample differs from the average for the typical cable system in the industry since the stratified sample design over-sampled larger systems. The average for the typical cable system in the industry would be lower due to the fact that smaller cable systems tend to carry fewer stations.

adjacent ADI. An average of 5.2 of the stations are within 50 miles of the principal headend of the cable system and 3 are beyond 50 miles. Exhibit B-4 provides a summary of these figures.

B. Arthur D. Little Sample

Channel lineups for a sample of 402 cable systems were obtained from a survey conducted by Arthur D. Little (ADL) on behalf of the National Cable Television Association (NCTA) for this litigation. The sampling methodology and survey design are discussed fully in the two ADL reports submitted in this proceeding. *Availability of Channels in U.S. Cable TV Systems*, and *Carriage of Must Carry TV Broadcast Stations*.

The lineups indicate which broadcast stations were being carried as of the time of the survey in November-December 1994 and February-March 1995. Cable systems from this survey are identified by their Nielsen Cable On-Line Data Exchange (CODE) headend ID number. Stations added since mid-1992 due to must carry were specifically coded in the survey. In order to obtain an approximation of each system's broadcast station lineup as of mid-1992, these added stations were deleted from the 1994-1995 lineups.

In order to use these data for further analysis, the broadcast station call letters from the channel lineups had to be matched with the list of all broadcast stations operating in 1992. A total of 41 call signs from the channel lineups were not found in the list of all operating stations. Further research indicated that ten stations had changed call letters, in which cases the call letters from the channel lineup data were revised to reflect the call letters as they appeared in the *Factbook*.

The remaining 31 stations in the channel lineup data that did not match with information in the *Factbook* and could not be attributed to a change in call letters were

deleted from the channel lineup data. In at least several cases, the stations had begun operation since 1992. To the extent that these stations represent local full-power broadcast television stations that were carried by the corresponding cable system, their deletion from my sample will cause me to understate the extent of carriage of local broadcast stations in the absence of must carry.

The database of cable systems and the broadcast signals they carried in the absence of must carry, created in the manner just described, is shown in Exhibit B-5.

The total number of stations carried by the 402 cable systems in the sample was 3,037.[9] The cable systems in the sample carried, in the absence of must-carry regulation, an average of 7.6 broadcast television stations.[10] Furthermore, 91 percent of the systems carried at least five stations. Over half of the systems carried at least seven stations. Exhibit B-6 lists the frequency distribution of the number of stations carried on a cable system.

Of the average of 7.6 stations carried on a cable system, 5.8 are from the same ADI as the cable system and 1.8 are from an adjacent ADI. An average of 5.2 of the stations are within 50 miles of the principal headend of the cable system and 2.4 are beyond 50 miles. Exhibit B-7 provides a summary of these figures.

II. Cable System Data

In addition to the channel lineups just discussed, additional data for each cable system in the two samples were compiled from a variety of sources.

---

[9] This count does not include satellite-delivered "superstations." It does include duplicate network affiliates.

[10] This average for the cable systems in the sample differs from the average for the typical cable system in the industry since the stratified sample design over-sampled larger systems. The average for the typical cable system in the industry would be lower due to the fact that smaller cable systems tend to carry fewer stations.

A. Economists, Inc. (EI) Sample

A comprehensive list of the variables and variable definitions compiled, as well as a listing of the data, are given in Exhibit B-8. The following sections describe the data sources.

1. Characteristics of the Cable System

For each cable system in the sample, the following data were obtained from the responses to the EI survey:

- number of basic subscribers;
- MSO name, if applicable;
- channel capacity of the system; and
- number of cable channels on which local advertising was inserted.

For systems that submitted more than one channel lineup card, adjustments were made to the survey data. For example, the subscriber figure obtained from some respondents was an aggregate of subscribers on several systems. If disaggregated subscriber counts were reported on the survey form, those were used to obtain a subscriber count only for the system of interest. If disaggregated subscriber counts were not reported, the subscriber count for the relevant system was taken from the 1993 *Factbook*. Channel capacity data were similarly adjusted where appropriate.

In addition, for systems that did not report either subscriber or capacity figures, corresponding data were obtained from the 1993 *Factbook*.

2. Cable Systems Locations

City, county, and headend locations of the cable systems were used to measure the distance between the cable system and various local broadcast stations.

The county location of, and the primary city served by, each cable system was obtained from the *Factbook* [11] by matching the system's owner and communities/counties served (according to the survey form) to the systems listed in the *Factbook*.

The NCTA, in conjunction with CRA, contacted the cable systems in the original EI survey to determine the latitude/longitude locations of each system's primary headend. Approximately 80 percent of the systems in the sample provided this information.

For the remaining systems, *AtlasGIS* mapping software (developed by Strategic Mapping, Inc.) was used to obtain the latitude/longitude locations of: (1) the primary city served by the cable system, and (2) the centroid of the county in which the primary headend of the cable system is located. Minor changes were made to the city names of 17 cable systems in order to match these names with the city names in the *AtlasGIS* database.

Each of the cable systems in the sample was placed in an ADI for purposes of determining which stations were in the same ADI as the cable system. The *AtlasGIS* software was used in determine the ADI to which each U.S. county was assigned for the year 1992. This information, in turn, was used to assign cable systems to ADIs.

3. Demographic Data

Four demographic variable were used in the regression analysis: median income, percent Hispanic, percent black, and percent college-educated for the counties served by the cable system. These data were taken by EI from the Nielsen CODE database in late 1992. CRA obtained these data in electronic form directly from EI.

---

[11] *1993 Television & Cable Factbook*, Cable Volume No. 61, Inc., pp. D13-D1878.

4. Vertical Relationship with Cable Programming Services

Data on MSO ownership in cable programming services was obtained from the *Factbook*.[12] An indicator variable was coded for each cable system in the EI sample indicating whether its MSO (if any) had an ownership in any cable programming service.

B. Arthur D. Little Sample

A comprehensive list of the variables and variable definitions compiled is given in Exhibit B-9. The following sections describe the sources of data.

1. Characteristics of the Cable System

For each cable system in the sample, the following data were obtained from the responses to the ADL survey:

- number of basic subscribers (from question 1); and,
- channel capacity of the system (from question 2).

2. Cable System Locations

City and county locations of the cable systems were used to measure the distance between the cable system and various local broadcast stations.

The county location of, and the primary city served by, each cable system was obtained from the Nielsen CODE database.

AtlasGIS mapping software was used to determine the latitude/longitude locations of: (1) the primary city served by the cable system, and (2) the centroid of the county in which the primary headend of the cable system is located. Minor changes were made to the city names of

---

[12] *1993 Television & Cable Factbook*, Stations Volume No. 61, pp. G65-G79.

some cable systems in order to match these names with the city names in the *AtlasGIS* database.

Each of the cable systems in the sample was placed in an ADI for purposes of determining which stations were in the same ADI market. The *AtlasGIS* software was used to obtain the Arbitron ADI to which each U.S. county was assigned for the year 1992. This information, in turn, was used to assign cable systems to ADIs.

III. Broadcast Television Station Data

Data were compiled on broadcast television stations operating in 1992. The primary source of these data is *Factbook*. This publication is compiled in the last two months of each year so that, for example, the 1993 edition includes stations in operation as of October 1992. See Exhibit B-10 for a complete list of variables and variable definitions, as well as a listing of the data. The following sections provide more detailed descriptions of the data sources used.

A. Station Characteristics

Data on broadcast television station characteristics were keypunched from the *1993 Television & Cable Factbook*.[13] The 1,462 stations in the *Factbook* include all full-power commercial and non-commercial television stations in operation during 1992.[14] The characteristics of these stations include the following: station call letters, channel number, network affiliation, type (commercial or non-commercial), date of first operation, city of license, and state and ADI of operation.

[13] *1993 Television & Cable Factbook, Stations* Volume No. 61, pp. A19-A1289; A1317-A1395.

[14] Television stations under construction or not broadcasting in 1992 were not included.

B. Satellite/Parent Stations

A list of 136 satellite stations[15] and their parent stations was keypunched from the *Factbook*.[16]

C. Station Transmitter Locations

The latitude/longitude locations of broadcast television station transmitters were acquired in electronic form from Warren Publishing, Inc. (Washington, DC). These data reflect current call letters; because of changes in call letters from 1992 to the present time, there were 41 stations in the 1993 *Factbook* data (1,462 stations in all) that were not in the electronic latitude/longitude database. For those 41 stations, the latitude/longitude locations were keypunched from the 1993 *Factbook*.

D. Broadcast Station Audience Ratings

Broadcast television station all-day ratings among non-cable households for November 1994 were obtained from Nielsen Media Research. Nielsen reports ratings for all stations that have a "reportable" rating, meaning a rating of at least 0.1 (viewing by at least one-tenth of one percent of all television households). A station's rating is defined as the percent of television households tuned in to the station during an average fifteen-minute interval during the relevant daypart.

IV. Television Market Data

This file contains data on the number and type of broadcast television stations operating in each of the television markets. Summary statistics for each 1992 ADI

[15] Satellites receive a broadcasting signal from another (parent) station, and therefore carry duplicated programming.

[16] *1993 Television & Cable Factbook*, Stations Volume No. 61, pp. A19-A1289; A1317-A1395.

television market were calculated from the station-by-station data discussed in the previous section. (The source of these data is the *1993 Television & Cable Factbook*.) These statistics include the total number of stations in each market, as well as the total number of each type of station (UHF/VHF, Commercial/Non-Commercial, and by individual network affiliation).

See Exhibit B-11 for a list of variables and variable definitions.

Exhibit B-1

Size Distribution of Cable Systems

	Population (1/1/92)		Dertouzos-Wildman Sample		Economists, Inc Sample	
Size Classes	Systems	% of Total	Systems	% of Total	Systems	% of Total
unknown	1,116	10.07%	0	—	0	—
0-250	2,957	26.68%	20	5.88%	28	10.29%
250-500	1,500	13.53%	20	5.88%	24	8.82%
500-3,500	3,317	29.93%	110	32.35%	70	25.74%
3,500-10K	1,048	9.46%	40	11.76%	33	12.13%
10K-20K	507	4.57%	30	8.82%	27	9.93%
20K-50K	417	3.76%	54	15.88%	34	12.50%
50K +	221	1.99%	66	19.41%	56	20.59%
TOTAL	11,083	100.0%	340	100.0%	272	100.0%

Sources:

Population (1/1/92) data from *Television & Cable Factbook*, Cable Volume No. 61, Warren Publishing, Inc., Washington, D.C., 1993, p. F13.

Dertouzos-Wildman sample data from Dertouzos, James and Wildman, Steven, *Competitive Effects of Broadcast Signals on Cable*, prepared for the National Cable Television Association, February 22, 1990, p. 9.

Economists, Inc. sample data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.

* * * *

Exhibit B-3
Frequency Distribution of Number of Stations Carried
(EI Sample)

Number of Stations Carried	Freqency (Number of Systems)	Percent of Systems	Cumulative Frequency	Cumulative Percent
2	1	0.4%	1	0.4%
3	4	1.5%	5	1.8%
4	12	4.4%	17	6.3%
5	41	15.1%	58	21.3%
6	24	8.8%	82	30.1%
7	40	14.7%	122	44.9%
8	45	16.5%	167	61.4%
9	25	9.2%	192	70.6%
10	20	7.4%	212	77.9%
11	21	7.7%	233	85.7%
12	14	5.1%	247	90.8%
13	10	3.7%	257	94.5%
14	8	2.9%	265	97.4%
15	5	1.8%	270	99.3%
16	1	0.4%	271	99.6%
17	1	0.4%	272	100.0%

Source:

Compiled by CRA from cable system channel lineup cards for the Economists, Inc. sample of cable systems.

Exhibit B-4

Number of Stations Carried by Sample Cable Systems
(total number/average per cable system)
(EI Sample)

	Stations in the Same ADI	Stations in an Adjacent ADI	Total
Within 50 Miles	1,236/4.5	191/0.7	1,427/5.2
Outside of 50 Miles	409/1.5	389/1.4	798/2.9
Total	1,645/6.0	580/2.1	2,225/8.2

Note:

Figures may not add to total because of rounding.

Sources:

Cable system data compiled by CRA from cable system channel lineup cards for the Economists, Inc. sample of cable systems.
Television station data compiled for *Television & Cable Factbook*, Stations Volume No. 61, Warren Publishing, Inc., Washington, D.C., 1993, pp. A-16-A-1396.

* * * *

Exhibit B-6

Frequency Distribution of Number of Stations Carried
(ADL Sample)

Number of Stations Carried	Frequency (Number of Systems)	Percent of Systems	Cumulative Frequency	Cumulative Percent
1	3	0.8%	3	0.8%
2	1	0.3%	4	1.0%
3	9	2.3%	13	3.3%
4	21	5.3%	34	8.5%
5	71	17.8%	105	26.3%
6	60	15.0%	165	41.4%
7	50	12.5%	215	53.9%
8	59	14.8%	274	68.7%
9	47	11.8%	321	80.5%
10	17	4.3%	338	84.7%
11	12	3.0%	350	87.7%
12	15	3.8%	365	91.5%
13	16	4.0%	381	95.5%
14	7	1.8%	388	97.2%
15	5	1.3%	393	98.5%
16	4	1.0%	397	99.5%
17	2	0.5%	399	100.0%

Source:

Compiled by CRA from cable system channel lineup cards for the Arthur D. Little sample of cable systems.

Exhibit B-7

Number of Stations Carried by Sample Cable Systems
(total number/average per cable system)
(ADL Sample)

	Stations in the Same ADI	Stations in an Adjacent ADI	Total
Within 50 Miles	1,837/4.6	236/0.6	2,073/5.2
Outside of 50 Miles	484/1.2	480/1.2	964/2.4
Total	2,321/5.8	716/1.8	3,037/7.6

Note:

Columns and rows may not total due to rounding.

Sources:

Cable system data compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable ssytems. Television station data compiled for *Television & Cable Factbook*, Stations Volume No. 61, Warren Publishing, Inc., Washington, D.C., 1993, pp. A-16-A-1396.

* * * *

[ATTACHMENT C]

DESCRIPTION OF METHODOLOGY FOR ANALYSIS OF CABLE SYSTEM CARRIAGE OF BROADCAST TELEVISION STATIONS[17]

I. Calculation of Proportions of Stations Carried

For each cable system in the sample, a list was compiled of all broadcast television stations that are local to it, using the two alternative definitions of local discussed in the declaration. That is, lists were compiled of (1) all *commercial* broadcast stations in the same ADI as each cable system in the sample and all *non-commercial* broadcast stations within 50 miles of the cable system (an approximation to the statutory definition of local), and (2) all broadcast stations both within the ADI *and* within 50 miles (my preferred definition of local).

For purposes of determining which stations were within 50 miles of the cable system, the location of the cable system was taken to be the latitude/longitude of the system's principal headend in cases in which that information was available (about 80 percent of the systems). For those systems for which the location of the principal headend was not available, the latitude/longitude of the principal city served by the cable system was used. For those systems for which neither the headend location nor the city location was available, the latitude/longitude of the centroid of the principal county served by the cable system was used.[18] In all cases, the location of the station was taken to be the latitude/longitude of the station's

[17] The methodology describes the procedures used for the EI sample. Differences in how the ADL sample was treated are clarified in footnotes.

[18] Headend locations were not available for the ADL sample. Thus, the city location was used, if available. Otherwise, the county centroid location was used.

transmitter. Given these locations, a great-circle distance between each cable system and every broadcast station was calculated so that those stations within 50 miles of each cable system could be determined. Each alternative list of local broadcast stations was then matched with the channel lineup of the corresponding system to determine which stations in each list were carried by the cable system.[19]

For each cable system, and for each definition of local, the proportion of local stations carried was calculated. The numerator of the proportion is the number of local stations listed on that cable system's 1992 channel lineup card.[20] The denominator is the total number of local stations. For this purpose, if the set of local stations contained duplicate network affiliates, those stations were counted only once in the denominator and at most once in the numerator (if either of the duplicates was carried). Likewise, if the set of local stations contained multiple signals from the same satellite/parent relationship, those stations were counted only once in the denominator and at most once in the numerator (if either of the related stations was carried).

The proportions for each cable system were averaged to obtain an overall carriage proportion for the entire sample. Since the sample is stratified, the average must take into account the proportion of the industry accounted for by each strata. Two different averages were calculated. The first average weights each stratum by the proportion of industry *systems* accounted for by that stra-

[19] While, under the statutory criterion, every cable system has some number of local stations associated with it, the same is not true for the combined ADI/50-mile criterion. Under the latter definition, there are some cable systems in the sample for which there are no local stations, i.e., there are no broadcast television stations that are both within the same ADI and within 50 miles.

[20] For the ADL sample, the 1992 channel lineup is estimated by deleting the stations added due to must carry from the 1994/95 lineup.

tum.[21] This statistic describes the behavior of the *typical system* in the industry. The second average weights each stratum by the proportion of industry *subscribers* accounted for by that stratum.[22] This statistic describes the behavior of the *typical subscriber* in the industry. These strata weights are shown in Exhibit C-1.

The averages calculated for both definitions of local are shown in Exhibit C-2 (Exhibit C-3 for the ADL sample). In addition, separate averages (reported only for the preferred definition of local and the subscriber-based average) were calculated for various classes of stations: UHF versus VHF, commercial versus non-commercial, and by affiliation type. These are shown in Exhibit C-4 (Exhibit C-5 for the ADL sample).

These reported carriage proportions likely understate the carriage proportion of stations that would qualify for must carry under the current regulations because not all local stations qualify for must-carry status. First, qualified stations must be able to deliver a sufficiently strong signal to the principal headend of the cable system. The data do not distinguish between stations that meet that criteria from those that do not. Second, a cable system's carriage obligations are limited by its channel capacity. Systems with a channel capacity of less than 12 are obligated to carry no more than 3 commercial stations. Systems with more than 12 channels are obligated to allocate no more than 1/3 of their channels for must-carry stations. Thus, a 36-channel system that is carying 12 out of 16 local stations would only be carrying 75 percent of local stations, even though it has fully met the current must-carry requirements.[23]

---

[21] Systems within a particular stratum get equal weights.

[22] Systems within a particular stratum are weighted by the number of basic subscribers to that system.

[23] The ADL sample affords an opportunity to estimate the importance of these effects. The ADL survey asked respondent cable systems how many broadcast television stations they were required to add since mid-1992 due to must carry regulations. The number of stations carried as of mid-1992 were over 90 percent of the total of those stations plus the stations added due to must-carry. This suggests that many of the non-carried local stations in our sample either turned out not to qualify for must carry or did not request carriage.

The calculated carriage proportions also tend to understate the overall extent to which cable systems carry broadcast stations. This is attributable to the problems (discussed in Section III.A. of the declaration) in defining what "local" means for a *particular* cable system. To give an example, the reported carriage proportions may include a cable system that is carrying only two of nine local stations, even though that cable system is carrying a total of eight or nine stations. The low proportion of local stations carried merely reflects the fact that the criterion used for defining local stations is inappropriate for this particular cable system.[24]

An alternative calculation was undertaken to estimate the carriage proportion of stations meeting a 2 percent share-of-viewing standard. Recall that the interim must carry rules struck down by the *Century* decision limited qualifying stations to those with at least a 2 percent share and a 5 percent net weekly circulation. For the purpose of my calculation, I imposed only the 2 percent share criteria, where share was calculated as the station's share of rating among those stations regarded as local under, alternatively, the regulatory definition or my preferred definition of local. These results are shown in Exhibit C-2 (Exhibit C-3 for the ADL sample).

---

[24] To make the point even more vividly, there are 88 systems in the sample that are carrying *no* local stations under theh preferred definition of local. Clearly, for at least these systems the definition of local is not very meaningful.

II. Viewing Share Analyses

A. Calculation of Viewing Shares

Local broadcast television viewing shares were calculated as follows.[25] Each local station's all-day [26] rating for the November sweep month of 1994 (based on Nielsen ratings using DMA television markets) was divided by the sum of such ratings for all of the stations regarded as local under a particular criterion (so that the shares add to 100 percent). For cases in which the set of local stations for a particular cable system included stations from more than one DMA, shares were weighted by the number of television households in the respective DMAs to account the fact that the shares were computed for different television markets. In particular, this adjustment consists of converting the shares of each station into number of households by multiplying by the number of households in the DMA to which the station was assigned in 1994.[27] This result was then divided by the sum across all local stations of viewing households in order to insure that the viewing shares of all local broadcast stations for a particular cable system summed to 100 percent.

The viewing shares calculated as just described differ from the viewing shares reported by Nielsen for several reasons. First, the set of broadcast stations over which the share is calculated is limited to those defined as local under one of the two definitions used for this analysis. Second, my calculation excludes non-broadcast television

---

[25] For reasons discussed below, the audience shares *reported by Nielsen* were not used in the analysis. The audience *ratings* reported by Nielsen were used to *calculate* viewing shares.

[26] Defined by Nielsen as 7:00 a.m.-1:00 a.m., Monday through Friday.

[27] Total television households were used in the computation as a proxy for households using television. This assumes that the percent of television households actually using television is the same across any two adjacent television markets.

stations from the denominator.[28] This will tend to make my shares slightly larger, in some cases, than those reported by Nielsen. Third, the shares reported by Nielsen use households using television (HUTs) as the denominator. This does not always equal the sum of the ratings because of non-reportable stations and households using multiple television sets. This factor could make my shares either slightly larger or slightly smaller than those reported by Nielsen. Finally, Nielsen reports shares that have been rounded to the nearest whole percentage point. I use unrounded shares in my calculations.

B. Percent of Local Broadcast Television Viewing Accounted for by Carried Stations

For each cable system in the sample, local broadcast television viewing shares of the carried stations (as calculated from reported ratings, as discussed above) were summed to determine the percentage of local television station viewing accounted for by the stations that were carried in the absence of must carry.

For this purpose, the viewing share of a Big Three network that was locally duplicated was taken to be the sum of the viewing shares of the duplicates. Likewise, satellites were treated as having the same viewing share as their parent.

The system-by-system percentages of viewing accounted for by carried stations were then averaged across all systems to obtain an overall average for the sample. Both system-based and subscriber-based averages were calculated. These are shown in Exhibit C-6 (Exhibit C-7 for the ADL sample). Systems for which none of the local stations had measurable viewing shares were excluded from the overall average.

---

[28] In some markets, certain cable network programming obtains reportable ratings even among non-cable households. This is presumably due to the use of home satellite dishes or other non-cable means of viewing these services.

C. Percent of Station Having Significant Viewing That Are Carried

The relationship between a station's ratings and whether it is carried by a local cable system was also analyzed by categorizing stations according to whether they had ratings (or shares) above some threshold, and according to whether they were carried on the relevant cable system in the sample. For this purpose, two alternative thresholds were used. Using the first threshold, stations were categorized according to whether or not they had any reportable ratings (i.e., viewing by at least one-tenth of one percent of television households). The alternative threshold is an audience share among the local broadcast television stations of at least one-half of one percent. Nielsen, as a matter of practice, reports shares rounded to whole percentage points. As a result, stations with a share of less than 0.5 percent are shown as having a non-reportable share.

The categorization of stations in this way produces a two-by-two grid showing how many stations and what percent of stations fall into each of the four groups defined by carried/non-carried and above threshold/below threshold. These are shown in Exhibit C-8 (Exhibit C-9 for the ADL sample) for the reportable rating threshold and in Exhibit C-10 (Exhibit C-11 for the ADL sample) for the 0.5 percent of ratings threshold.

Exhibit C-12 reports the same information for a finer breakdown of station ratings. It shows that most of the rated stations that are *not* carried in fact have audience shares of less than 5 percent. Moreover, the percentage of stations carried increases with audience share. For example, stations with shares equal to one-half of 1 percent or lower have a 42 percent (unconditional) probability of being carried; stations with shares between one-half of 1 percent and 2 percent have a 73 percent probability of being carried; stations with shares between 2 and 5 percent have an 81 percent probability of being

carried; stations with shares between 5 and 10 percent have a 95 percent chance of being carried; and stations with shares in excess of 10 percent have a 98 percent chance of being carried.[29] The probability is less than 0.001 that the relationship between viewing shares and carriage is random, based on a standard chi-square statistical test. (A similar table for the ADI sample is shown in Exhibit C-13.)

III. Regression Analysis

A. Model of Individual Station Carriage

The results on viewing shares discussed above and in the main text of this report show that broadcast stations with at least some measurable viewing share are very likely to be carried, and that stations with no measurable viewing share are still carried in large numbers but are significantly less likely to be carried than rated stations.

There are other factors that may affect the probability that a given station will be carried on a particular cable system. These factors are:

- station characteristics—such as audience share (as just discussed);
- cable system characteristics—such as channel capacity and system size (e.g., number of subscribers); and
- market characteristics—such as the total number of stations in the market and demographic characteristics of the population.

---

[29] The cases in which stations with a relatively high audience share are not carried are often cases in which the cable system is situated near the boundary of two ADIs and is carrying a complement of stations from both ADIs. In these cases, even a station with a relatively high share may have a low marginal value to the system's subscribers.

Furthermore, if the broadcasters' claims that cable operators have anticompetitive incentives to exclude broadcast stations were correct, then factors that would increase this anticompetitive incentive might affect the probability of carriage. This might include, in addition to audience share, the number of locally ad-insertable cable channels on the cable system, and whether the MSO has an ownership interest in cable programming services.

The station carriage data from the EI sample were used to estimate a model of the probability that a given station would be carried on a given system, on the basis of the factors just described. Each cable system-local broadcast station pair is an observation in the model, where the depair is is an observation in the model, where the dependent variable is a 0-1 dummy variable indicating whether the station is carried on the cable system. The independent variables include: viewing share of the station, log of the channel capacity of the cable system, log of the number of subscribers on the cable system, log of the total number of stations in the local area, percent Hispanic, percent black, percent college-educated, log of median income, number of cable channels available for local ad-insertion, and a dummy variable indicating whether the MSO has an ownership interest in a cable programming service. The model was estimated as a logic regresssion using maximum likelihood estimation. The results are shown in Exhibit C-14.

The results are consistent with the expectation that stations with any viewership share at all have a high probability of being carried, and those with no viewership share have about an even chance of being carried. Furthermore, the results are inconsistent with the view that cable systems exclude broadcast stations to foreclose them from a portion of local advertising market. Neither the number of locally ad-insertable cable channels on the cable system nor the fact that an MSO has an ownership interest in a cable programming service had any statistically

significant effect on probability of carriage. More fundamentally, those stations that are the biggest players in the local ad markets—the highly viewed stations—are exactly those that are most likely to be carried. Thus, these results do not support the broadcasters' position on cable operators' incentives to exclude stations.

Exhibit C-1

Calculation of Strata Weights

	Poulation (1/1/92)			
Size Classes	No. of Systems	% of Total	No. of Subscribers	% of Total
unknown	1,116	10.07%	—	—
0-250	2,957	26.68%	380,323	0.71%
250-500	1,500	13.53%	536,734	1.01%
500-3,500	3,317	29.93%	4,633,717	8.68%
3,500-10K	1,048	9.46%	6,247,537	11.70%
10K-20K	507	4.57%	7,204,259	13.50%
20K-50K	417	3.76%	12,834,441	24.05%
50K +	221	1.99%	21,538,463	40.35%
TOTAL	11,083	100.0%	53,375,474	100.0%

Source:

Television & Cable Factbook, Cable Volume No. 61, Warren Publishing, Inc., Washington, D.C., 1993, p. F-3.

Exhibit C-2

Proportion of Local Stations Carried
(EI Sample)

Summary Statistic	Criterion for Defining Local Stations					
	Statutory Definition			Combined ADI & 50-Mile		
	Commercial	Non-Commercial	Total	Commercial	Non-Commercial	Total
System-Based Average	0.74	0.70	0.72	0.75	0.73	0.72
Subscriber-Based Average	0.80	0.71	0.77	0.84	0.78	0.81
Subscriber-Based Average (Excluding stations with less than 2% share of local viewing)	0.96	0.94	0.95	0.98	0.97	0.98

Notes:
Regulatory Definition: Local stations are those commercial stations in the same ADI as the cable system and those non-commercial stations within 50 miles of the principal headend of the cable system.
Combined ADI & 50-Mile Definition: Local stations are those commercial and non-commercial stations that are both in the same ADI as the cable system and within 50 miles of the principal headend of the cable system.
The two alternative summary statistics are defined in the text of Appendix C. The subscriber-based average is the preferred definition since it applies to the typical subscriber.

Source:
Compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.

Exhibit C-3

Proportion of Local Stations Carried
(ADL Sample)

Summary Statistic	Criterion for Defining Local Stations					
	Statutory Definition			Combined ADI & 50-Mile		
	Commercial	Non-Commercial	Total	Commercial	Non-Commercial	Total
System-Based Average	0.72	0.64	0.69	0.78	0.71	0.75
Subscriber-Based Average	0.79	0.74	0.76	0.84	0.79	0.81
Subscriber-Based Average (Excluding stations with less than 2% share of local viewing)	0.96	0.94	0.95	0.97	0.94	0.96

Notes:
Regulatory Definition: Local stations are those commercial stations in the same ADI as the cable system and those non-commercial stations within 50 miles of the principal headend of the cable system.
Combined ADI & 50-Mile Definition: Local stations are those commercial and non-commercial stations that are both in the same ADI as the cable system and within 50 miles of the principal headend of the cable system.
The two alternative summary statistics are defined in the text of Appendix C. The subscriber-based average is the preferred definition since it applies to the typical subscriber.

Source:
Compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable systems.

Exhibit C-4

Proportion of Local Stations Carried, by Category
(EI Sample)

Network Affiliation	VHF		UHF		Total	
	Number of Systems	Average Proportion	Number of Systems	Average Proportion	Number of Systems	Average Proportion
Big Three	190	0.99	68	0.96	209	0.99
Fox	30	0.99	125	0.97	155	0.98
Independents	31	0.98	140	0.61	146	0.65
Misc. Networks	-	-	62	0.55	62	0.55
Non-Big Three Subtotal	48	0.98	182	0.70	186	0.73
Commercial Subtotal	192	0.99	200	0.73	223	0.84
Non-Commercial	100	0.96	140	0.70	192	0.78
All Stations	201	0.98	211	0.71	234	0.81

Note:
Average proportions shown are subscriber-based averages of individual system proportions, using the combined ADI/50-mile criterion for local stations.

Source:
Compiled by CRA from cable system channel lineup cards from the Economists, Inc sample of cable systems.

Exhibit C-5

Proportion of Local Stations Carried, by Category (ADL Sample)

Network Affiliation	VHF		UHF		Total	
	Number of Systems	Average Proportion	Number of Systems	Average Proportion	Number of Systems	Average Proportion
Big Three	287	0.99	109	0.98	316	0.99
Fox	36	0.99	196	0.97	232	0.97
Independents	47	1.00	204	0.60	216	0.67
Misc. Networks	-	-	92	0.50	92	0.50
Non-Big Three Subtotal	63	0.99	281	0.70	285	0.74
Commercial Subtotal	289	0.99	313	0.72	339	0.84
Non-Commercial	141	0.96	242	0.69	307	0.79
All Stations	300	0.99	327	0.70	355	0.81

Note:
Average proportions shown are subscriber-based averages of individual system proportions, using the combined ADI/50-mile criterion for local stations.

Source:
Compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable systems.

Exhibit C-6

Viewing Accounted for by Carried Stations
(EI Sample)

Summary Statistic	Criterion for Defining Local Stations	
	Statutory Definition	Combined ADI & 50-Mile
System-Based Average	91%	94%
Subscriber-Based Average	97%	98%

Note:
Audience shares are calculated as a proportion of all local broadcast station viewing among non-cable households. Viewing of non-local stations and cable programming is not included.

Source:
Compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.

Exhibit C-7

Viewing Accounted for by Carried Stations
(ADL Sample)

Summary Statistic	Criterion for Defining Local Stations	
	Statutory Definition	Combined ADI & 50-Mile
System-Based Average	87%	88%
Subscriber-Based Average	97%	97%

Note:
Audience shares are calculated as a proportion of all local broadcast station viewing among non-cable households. Viewing of non-local stations and cable programming is not included.

Source:
Compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable systems.

Exhibit C-8

Broadcast Station Viewership Among Non-Cable Households and the Likelihood of Carriage
(Using a Reportable Rating[1] Threshold)
(EI Sample)

Number of Stations . . .	Number of Stations with . . .		All Stations
	No Reportable Rating	Any Reportable Rating	
Not Carried	218	131	349
Carried	98	1,133	1,231
All Stations	316	1,264	1,580
Percent Carried[2]	31%	90%	78%

86% = percent of stations for which one could correctly predict whether the station is carried based solely on whether it has a measurable audience share.
((218 + 1,133) / 1,580)

The Chi-Square test statistic of 504.836 (prob = 0.000) rejects the hypothesis of a general (random) association between a reportable rating and carriage.

Note:
[1]A station's rating by Nielsen is reportable if the station is viewed by at least one-tenth of one percent of television households.
[2]Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:
Cable system data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.
Audience ratings data obtained from Nielsen Media Research.

Exhibit C-9

Broadcast Station Viewership Among Non-Cable Households and the Likelihood of Carriage
(Using a Reportable Rating[1] Threshold)
(ADL Sample)

Number of Stations . . .	Number of Stations with . . .		All Stations
	No Reportable Rating	Any Reportable Rating	
Not Carried	295	206	501
Carried	135	1,711	1,846
All Stations	430	1,917	2,347
Percent Carried[2]	31%	89%	79%

85% = percent of stations for which one could correctly predict whether the station is carried based solely on whether it has a measurable audience share. ((295 + 1,711) / 2,347)

The Chi-Square test statistic of 700.280 (prob = 0.000) rejects the hypothesis of a general (random) association between a reportable rating and carriage.

Note:
[1]A station's rating by Nielsen is reportable if the station is viewed by at least one-tenth of one percent of television households.
[2]Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:
Cable system data compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable systems.
Audience ratings data obtained from Nielsen Media Research.

Exhibit C-10

Broadcast Station Viewership Among Non-Cable Households and the Likelihood of Carriage
(Using a Minimum One-Half of One Percent Share[1] Threshold)
(EI Sample)

Number of Stations . . .	Number of Stations with . . .		All Stations
	Less than 0.5% Share	Greater than 0.5% Share	
Not Carried	252	97	349
Carried	155	1,076	1,231
All Stations	407	1,173	1,580
Percent Carried[2]	38%	92%	78%

84% = percent of stations for which one could correctly predict whether the station is carried based solely on whether it has a measurable audience share. ((252 + 1,076) / 1,580)

The Chi-Square test statistic of 505.310 (prob = 0.000) rejects the hypothesis of a general (random) association between a reportable rating and carriage.

Note:
[1]A station's share is calculated as its rating as a percent of the total ratings of all local stations.
[2]Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:
Cable system data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.
Audience ratings data obtained from Nielsen Media Research.

Exhibit C-11

Broadcast Station Viewership Among Non-Cable Households and the Likelihood of Carriage
(Using a Minimum One-Half of One Percent Share[1] Threshold)
(ADL Sample)

Number of Stations . . .	Number of Stations with . . .		All Stations
	Less than 0.5% Share	Greater than 0.5% Share	
Not Carried	341	160	501
Carried	205	1,641	1,846
All Stations	546	1,801	2,347
Percent Carried[2]	38%	91%	79%

84% = percent of stations for which one could correctly predict whether the station is carried based solely on whether it has a measurable audience share. ((341 + 1,641) / 2,347)

The Chi-Square test statistic of 716.139 (prob = 0.000) rejects the hypothesis of a general (random) association between a reportable rating and carriage.

Note:
[1]A station's share is calculated as its rating as a percent of the total ratings of all local stations.
[2]Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:
Cable system data compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable systems.
Audience ratings data obtained from Nielsen Media Research.

Exhibit C-12

Audience Share and the Likelihood of Carriage
(EI Sample)

Number of Stations . . .	Audience Share					All Stations
	0% - 0.5%	0.5% - 2.0%	2.0% - 5.0%	5.0% - 10.0%	10.0% +	
Not Carried	252	41	30	14	12	349
Carried	155	81	132	163	700	1,231
All Stations	407	122	162	177	712	1,580
Percent Carried[1]	38%	66%	81%	92%	98%	78%

The Chi-Square test statistic of 578.656 (prob = 0.000) rejects the hypothesis of a general (random) association between audience share and carriage.

Note:
[1]Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:
Cable system data compiled by CRA from cable system channel lineup cards from the Economists, Inc. sample of cable systems.
Audience ratings data obtained from Nielsen Media Research.

Exhibit C-13

Audience Share and the Likelihood of Carriage
(ADL Sample)

Number of Stations . . .	Audience Share					All Stations
	0% - 0.5%	0.5% - 2.0%	2.0% - 5.0%	5.0% - 10.0%	10.0% +	
Not Carried	341	52	33	19	56	501
Carried	205	126	217	220	1,078	1,846
All Stations	546	178	250	239	1,134	2,347
Percent Carried[1]	38%	71%	87%	92%	95%	79%

The Chi-Square test statistic of 773.368 (prob = 0.000) rejects the hypothesis of a general (random) association between audience share and carriage.

Note:
[1]Because these carriage percentages are ratios of the total number of local stations carried to the total number of local stations, they differ from the carriage proportions, reported elsewhere in this analysis, that are calculated as averages of system-by-system carriage proportions.

Sources:
Cable system data compiled by CRA from cable system channel lineup cards from the Arthur D. Little sample of cable systems.
Audience ratings data obtained from Nielsen Media Research.

Exhibi 14

Logit Model of Individual Carriage Instances
(EI Sample / Combined ADI & 50-Mile Definition of Local)

Dependent Variable: CARRIED

Independent Variable	All Stations (OBS=1382)			UHF Stations Only (OBS=816)			PBS Stations Only (OBS=307)		
	Parameter Estimate	Standard Error	Pr > Chi-Square	Parameter Estimate	Standard Error	Pr > Chi-Square	Parameter Estimate	Standard Error	Pr > Chi-Square
INTERCPT	-2.9424	4.2912	0.4929	-3.9094	4.6819	0.4037	-7.4263	7.9611	0.3509
NA4NR	0.1985	0.0170	0.0001	0.1972	0.0240	0.0001	0.7123	0.1112	0.0001
PROGINT	0.0276	0.1694	0.8705	0.1393	0.1821	0.4443	-0.0196	0.3216	0.9513
LCAPAC	0.2792	0.3337	0.4028	0.5129	0.3704	0.1660	0.5068	0.6360	0.4256
LBSUBS	0.1852	0.0702	0.0083	0.2151	0.0772	0.0054	0.1606	0.1372	0.2420
LOCADCH	0.0158	0.0232	0.4968	0.0073	0.0251	0.7712	-0.0130	0.0444	0.7698
LSTNTOT	-0.5342	0.2220	0.0161	-0.6583	0.2440	0.0070	0.2002	0.4668	0.6680
HISP	0.0108	0.0087	0.2134	0.0085	0.0091	0.3513	0.0047	0.0164	0.7735
BLACK	-0.0026	0.0067	0.6953	-0.0001	0.0072	0.9930	0.0169	0.0124	0.1723
COLLGRAD	-0.0050	0.0133	0.7050	-0.0031	0.0143	0.8284	-0.0311	0.0253	0.2182
LINCOME	0.1341	0.4600	0.7707	0.1220	0.4973	0.8061	0.3377	0.8525	0.6920

Classification Table

Model		Correct		Incorrect		Percentages		
	Prob Level	Event	Non-Event	Event	Non-Event	Correct	False Positive	False Negative
All Stations	0.500	1012	116	194	60	81.6	16.1	34.1
UHF Stations Only	0.500	438	158	136	84	73.0	23.7	34.7
PBS Stations Only	0.500	164	62	39	42	73.6	19.2	40.4

Note:
Regressions include stations for which Nielsen all-day non-cable household ratings are available.

Exhibit C-14

Logit Model of Individual Carriage Instances
(EI Sample / Statutory Definition of Local)

Dependent Variable: CARRIED

Independent Variable	All Stations (OBS=2004)			UHF Stations Only (OBS=1166)			PBS Stations Only (OBS=398)		
	Parameter Estimate	Standard Error	Pr > Chi-Square	Parameter Estimate	Standard Error	Pr > Chi-Square	Parameter Estimate	Standard Error	Pr > Chi-Square
INTERCPT	-10.1098	3.2859	0.0021	-12.1002	3.8515	0.0017	2.4052	6.0848	0.6926
NA4NR	0.2287	0.0137	0.0001	0.3206	0.0241	0.0001	0.3583	0.0632	0.0001
PROGINT	0.3041	0.1364	0.0258	0.3929	0.1562	0.0119	0.1199	0.2483	0.6291
LCAPAC	0.9659	0.2419	0.0001	0.8862	0.2941	0.0026	0.6532	0.4731	0.1673
LBSUBS	0.0595	0.0576	0.3015	0.1339	0.0679	0.0487	-0.0064	0.1051	0.9515
LOCADCH	0.0225	0.0197	0.2528	0.0199	0.0225	0.3772	0.0007	0.0341	0.9831
LSTNTOT	-0.3893	0.1644	0.0179	-0.4215	0.1920	0.0281	0.4281	0.2941	0.1456
HISP	0.0034	0.0068	0.6147	0.0036	0.0077	0.6396	-0.0129	0.0140	0.3575
BLACK	0.0032	0.0054	0.5557	0.0074	0.0061	0.2278	0.0034	0.0091	0.7061
COLLGRAD	-0.0133	0.0107	0.2129	-0.0163	0.0121	0.1797	-0.0031	0.0189	0.8679
LINCOME	0.6081	0.3504	0.0826	0.7320	0.4087	0.0733	-0.5744	0.6594	0.3838

Classification Table

Model		Correct		Incorrect		Percentages		
	Prob Level	Event	Non-Event	Event	Non-Event	Correct	False Positive	False Negative
All Stations	0.500	1246	382	198	178	81.2	13.7	31.8
UHF Stations Only	0.500	458	441	89	178	77.1	16.3	28.8
PBS Stations Only	0.500	198	62	89	49	65.3	31.0	44.1

Note:
Regressions include stations for which Nielsen all-day non-cable household ratings are available.

[ATTACHMENT D]

DESCRIPTION OF DATA SOURCES AND METHODOLOGY FOR ANALYSIS OF BROADCAST STATION ENTRY

I. Data Sources

Three sources of data have been compiled on the number of broadcast television stations in operation each year. Each is described below, followed by a discussion of the comparability of the data sources.

A. Data on Aggregate Station Counts

The Federal Communications Commission (FCC) publishes historical data on the number of television broadcast stations in operation in each year, with separately reported totals for commercial VHF stations, public VHF stations, commercial UHF stations, and public UHF stations. These data are reprinted each year by Warren Publishing in *Television & Cable Factbook*.[30] The 1995 *Factbook* contains station counts for each year from 1946 to 1994. This source reports the number of stations as of January 1 of each year. In order to make these data consistent with other sources, they have been re-expressed in terms of December 31 of the previous year. The data expressed in this way are shown in Exhibit D-1.

While these data are instructive, they do not allow one to construct totals for various station categories—for example, for the number of network affiliates and independent stations by year. Moreover, they provide information only about the net change in the number of stations operating in each year, not entry and exit.

B. Counts Compiled from Individual Station Data

While the data just discussed do not provide counts separately by station affiliation, those counts can be constructed. The *Factbook* for each year contains detailed data regarding each individual licensed broadcast televi-

sion station in operation as of the previous year. These data include such information as: whether the station operates in the VHF or UHF band; whether the station is commercial or non-commercial; the station's network affiliation; and the date the station began broadcasting. The 1995 (electronic) *Factbook* contains such profiles for stations in operation as of early 1995.[31]

1. Market-by-Market Station Counts for 1981, 1987, and 1992

We have compiled the number of stations in operation, by market, for three particular years: 1981, 1987, and 1992 (using the 1981-82, 1988, and 1993 *Factbooks*, respectively).[32] [33] This exercise ensures that both entry and exit of stations are taken into account. The results are shown in Exhibit 11 in the main text of the report.

2. Time-Series of Station Counts, 1940-1994

In order to obtain complete time-series, we have also estimated the number of stations in operation in each year by arraying the stations *currently in operation*[34] by the year in which they first began operation. The result is a count in each year of the number of *currently operating* stations that were in operation in that year. The counts

[30] *1995 Television & Cable Factbook*, Stations Volume No. 63 (Warren Publishing Inc., Washington, DC), p. iv.

[31] *1995 Television & Cable Factbook* (Warren Publishing Inc., Washington, DC), electronic version.

[32] Stations in operation in 1992 that had a beginning date of operation prior to either 1981 or 1987 were treated as being in operation in those years even if they were not listed in that year's *Factbook*.

[33] Stations are included, for all three years, within the ADI to which they were assigned in 1992.

[34] The stations currently in operation, and their date of first operation, were taken from the electronic version of the *1995 Television & Cable Factbook*.

are categorized according to each station's *current* affiliation.

This procedure has two biases. First, the number of stations in operation in any earlier year will be understated to the extent that broadcast licenses have been returned to the FCC and have not subsequently been reassigned. There are apparently very few such instances. Second, the number of affiliates of a particular type in a given year will be misstated to the extent that stations have changed their affiliation. Since it is more likely that independent stations have become network affiliates than vice versa, the number of affiliates in any given year will be overstated and the number of independent stations will be understated.

Like the station count data discussed above, these data are divided into the following four mutually exclusive groupings: commercial VHF stations, non-commercial VHF stations, commercial UHF stations, and non-commercial UHF stations. In addition, in this case, the commercial stations were further divided into network affiliates and independent stations (including Fox affiliates). These data are shown in Exhibit D-2.

C. Counts of the Number of Independent Stations

The third category of data consists of two separate counts of commercial independent stations compiled by INTV. One is a listing of commercial independent stations operating in 1990, arrayed by year of sign-on. Thus, like the counts compiled from individual station data, independent stations are are no longer operating, have become public stations, or have affiliated with a network are not counted. The second count is a listing of independent stations operating in 1989, arrayed by year of sign-on. This second source is not documented, and the figures differ significantly from the other INTV list. The reasons

for the differences are unknown. Both sources are shown in Exhibit D-3.

D. Comparability of Data from Different Sources

In principle, the aggregate station count data reported in the *Factbook* should agree with the station counts compiled from the individual station data (also reported in the *Factbook*). In practice, the two sets of figures differ in terms of total number of stations for two reasons. First, the aggregate station counts come from the 1995 hardcopy *Factbook*, whereas the individual station data are taken from the 1995 electronic *Factbook*. Second, the two series differ because stations that have exited are not contained in the counts compiled from individual station data, and stations that have changed affiliation are classified incorrectly in some years.

Exhibits D-4 and D-5 show comparisons of the aggregate station count data and the counts compiled from individual station data. Exhibit D-4 compares VHF and UHF commercial stations. Exhibit D-5 compares VHF and UHF non-commercial stations. As shown there, the two data sources track very closely, with the individual station data typically undercounting by a small amount.

There are three different sources of data for counts of independent stations: a 1989 INTV list, a 1991 INTV list, and the data compiled from the individual station data in the *Factbook*. The latter includes Fox affiliates, but it is not clear whether the two former lists include Fox affiliates. The three data sources produce different counts, but the basic trend is similar. Each of the data sources was created by arraying stations in operation at a given point in time by the year in which they began operation. Since the different lists were compiled at different times, they will necessarily give different counts in each year. Exhibit D-6 compares the different counts of independent stations.

Exhibit D-1

Number of Broadcast Television Stations, 1945 - 1994[1]

Year	VHF			UHF			Total VHF and UHF		
	Commercial [1]	Non-Commercial [2]	Total [3]	Commercial [4]	Non-Commercial [5]	Total [6]	Commercial [7]	Non-Commercial [8]	Total [9]
1945			6						6
1946			12						12
1947			16						16
1948			51						51
1949			98						98
1950			107						107
1951			108						108
1952			120			6			126
1953	233	1	234	121	1	122	354	2	356
1954	297	8	305	114	3	117	411	11	422
1955	344	13	357	97	5	102	441	18	459
1956	381	17	398	90	6	96	471	23	494
1957	411	22	433	84	6	90	495	28	523
1958	433	28	461	77	7	84	510	35	545
1959	440	34	474	75	10	85	515	44	559
1960	451	37	488	76	15	91	527	52	579
1961	458	43	501	83	19	102	541	62	603
1962	466	46	512	91	22	113	557	68	625
1963	476	53	529	88	32	120	564	85	649
1964	481	58	539	88	41	129	569	99	668
1965	486	65	551	99	49	148	585	114	699
1966	492	71	563	118	56	174	610	127	737
1967	499	75	574	136	75	211	635	150	785
1968	499	78	577	163	97	260	662	175	837
1969	501	80	581	176	105	281	677	185	862
1970	503	86	589	179	113	292	682	199	881
1971	508	90	598	185	123	308	693	213	906
1972	510	93	603	187	137	324	697	230	927
1973	513	92	605	184	149	333	697	241	938
1974	514	95	609	192	152	344	706	247	953
1975	511	97	608	190	162	352	701	259	960
1976	515	101	616	196	160	356	711	261	972
1977	515	102	617	201	164	365	716	266	982
1978	515	107	622	209	167	376	724	274	998
1979	516	109	625	218	168	386	734	277	1,011
1980	519	111	630	237	171	408	756	282	1,038
1981	517	112	629	260	176	436	777	288	1,065
1982	519	114	633	294	179	473	813	293	1,106
1983	523	117	640	318	180	498	841	297	1,138
1984	520	121	641	363	193	556	883	314	1,197
1985	522	121	643	397	195	592	919	316	1,235
1986	524	121	645	444	201	645	968	322	1,290
1987	539	122	661	489	212	701	1,028	334	1,362
1988	545	124	669	516	218	734	1,061	342	1,403
1989	547	125	672	545	225	770	1,092	350	1,442
1990	547	126	673	551	235	786	1,098	361	1,459
1991	551	126	677	567	237	804	1,118	363	1,481
1992	552	127	679	586	241	827	1,138	368	1,506
1993	561	126	687	584	241	825	1,145	367	1,512
1994	562	126	688	599	245	844	1,161	371	1,532

Note:
[1]The *Factbook* reports data as of January 1st of each year, but the data are listed here as the year-end total for the previous year. Thus, *Factbook* data for January 1, 1995 are displayed here as a 1994 end-of-year total.

Source:
Television & Cable Factbook, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

ATTACHMENT D

Exhibit D-2

Number of Broadcast Television Stations, 1940-1994 [1, 2, 3]

	VHF					UHF					Total VHF and UHF				
	Commercial			Non-Commercial [6]	Total [7]	Commercial			Non-Commercial [6]	Total [9]	Commercial			Non-Commercial [6]	Total [11]
YEAR	Network [1]	Indep [4] [2]	Total [8] [3]	[4]	[5]	Network [3] [6]	Indep [4] [7]	Total [5] [8]	[9]	[10]	Network [3] [11]	Indep [4] [12]	Total [10] [13]	[14]	[15]
1940	1	0	1	0	1	0	0	0	0	0	1	0	1	0	1
1941	4	0	4	0	4	0	0	0	0	0	4	0	4	0	4
1942	4	0	4	0	4	0	0	0	0	0	4	0	4	0	4
1943	5	0	5	0	5	0	0	0	0	0	5	0	5	0	5
1944	5	1	6	0	6	0	0	0	0	0	5	1	6	0	6
1945	5	1	6	0	6	0	0	0	0	0	5	1	6	0	6
1946	5	1	6	0	6	0	0	0	0	0	5	1	6	0	6
1947	14	3	17	0	17	0	0	0	0	0	14	3	17	0	17
1948	39	8	47	0	47	0	0	0	0	0	39	8	47	0	47
1949	80	16	96	0	96	0	0	0	0	0	80	16	96	0	96
1950	89	16	105	0	105	0	0	0	0	0	89	16	105	0	105
1951	90	16	106	0	106	0	0	0	0	0	90	16	106	0	106
1952	98	19	117	0	117	1	1	2	0	2	99	20	119	0	119

	VHF					UHF					Total VHF and UHF				
	Commercial			Non-Commercial [6]	Total [7]	Commercial			Non-Commercial [6]	Total [9]	Commercial			Non-Commercial [6]	Total [11]
YEAR	Network [1]	Indep [4] [2]	Total [5] [3]	[4]	[5]	Network [3] [6]	Indep [4] [7]	Total [5] [8]	[9]	[10]	Network [3] [11]	Indep [4] [12]	Total [10] [13]	[14]	[15]
1953	205	23	228	1	229	35	8	43	1	44	240	31	271	2	273
1954	270	25	295	7	302	43	10	53	4	57	313	35	348	11	359
1955	311	29	340	14	354	45	11	56	5	61	356	40	396	19	415
1956	349	31	380	18	398	47	11	58	6	64	396	42	438	24	462
1957	370	31	401	22	423	51	11	62	6	68	421	42	463	28	491
1958	389	35	424	28	452	52	11	63	8	71	441	46	487	36	523
1959	395	36	431	33	464	56	13	69	11	80	451	49	500	44	544
1960	403	38	441	36	477	56	14	70	12	82	459	52	511	48	559
1961	409	38	447	43	490	60	16	76	16	92	469	54	523	59	582
1962	420	39	459	48	507	62	18	80	25	105	482	57	539	73	612
1963	428	39	467	51	518	63	19	82	26	108	491	58	549	77	626
1964	434	39	473	58	531	64	21	85	36	121	498	60	558	94	652
1965	440	39	479	64	543	69	24	93	45	138	509	63	572	109	681
1966	445	39	484	70	554	73	29	102	51	153	518	68	586	121	707
1967	450	41	491	74	565	77	36	113	73	186	527	77	604	147	751
1968	451	42	493	78	571	87	50	137	94	231	538	92	630	172	802
1969	454	42	496	79	575	94	51	145	101	246	548	93	641	180	821
1970	457	42	499	86	585	105	54	159	108	267	562	96	658	194	852
1971	457	42	499	91	590	114	59	173	117	290	571	101	672	208	880

1972	459	42	501	94	595	114	62	176	131	307	573	104	677	225	902
1973	461	42	503	94	597	115	64	179	141	320	576	106	682	235	917
1974	463	42	505	98	603	117	69	186	145	331	580	111	691	243	934
1975	464	42	506	100	606	118	72	190	156	346	582	114	696	256	952
1976	468	42	510	104	614	119	75	194	157	351	587	117	704	261	965
1977	470	42	512	106	618	120	79	199	162	361	590	121	711	268	979
1978	470	43	513	110	623	122	84	206	165	371	592	127	719	275	994
1979	471	43	514	111	625	124	94	218	167	385	595	137	732	278	1010
1980	472	43	515	115	630	129	105	234	172	406	601	148	749	287	1036
1981	472	45	517	115	632	131	132	263	176	439	603	177	780	291	1071
1982	473	47	520	117	637	136	163	299	179	478	609	210	819	296	1115
1983	473	51	524	120	644	142	185	327	184	511	615	236	851	304	1155
1984	476	53	529	121	650	144	211	355	194	549	620	264	884	315	1199
1985	476	55	531	121	652	150	246	396	198	594	626	301	927	319	1246
1986	477	56	533	122	655	151	289	440	207	647	628	345	973	329	1302
1987	479	56	535	122	657	157	317	474	217	691	636	373	1009	339	1348
1988	481	60	541	124	665	159	344	503	223	726	640	404	1044	347	1391
1989	481	61	542	125	667	163	367	530	230	760	644	428	1072	355	1427
1990	482	63	545	125	670	165	379	544	234	778	647	442	1089	359	1448
1991	483	65	548	125	673	168	393	561	237	798	651	458	1109	362	1471
1992	483	66	549	126	675	169	409	578	240	818	652	475	1127	366	1493
1993	484	66	550	126	676	169	417	586	240	826	653	483	1136	366	1502
1994	484	67	551	126	677	169	436	605	240	845	653	503	1156	366	1522

Notes:

[1] The *Factbook* lists the current station affiliation and the year of sign on for all stations in operation as of 1994. Therefore, the figures do not reflect changes in station affiliation or stations that have gone off the air.

[2] Includes stations in Guam, Puerto Rico and the Virgin Islands.

[3] Includes affiliates of ABC, CBS, NBC, and joint network/Fox stations.

[4] Includes independents and Fox stations.

[5] Column [3] = [1] + [2].

[6] Includes public and educational stations.

[7] Column [5] = [3] + [4].

[8] Column [8] = [6] + [7].

[9] Column [10] = [8] + [9].

[10] Column [13] = [11] + [12].

[11] Column [15] = [13] + [14].

Sources:

Television station data obtained from Warren Publishing, Inc., Washington, D.C.
Date of operation data compiled from *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, pp. A16-A1346.

Exhibit D-3

Number of Independent Broadcast Television Stations, 1952-1991

Year	INTV 1989 List	INTV 1991 List
1952	[1]	[2]
1951	13	14
1953	19	25
1954	19	30
1955	22	34
1956	23	35
1957	23	
1958	24	39
1959	26	42
1960	26	45
1961	28	48
1962	30	51
1963	31	52
1964	34	54
1965	38	57
1966	44	62
1967	50	70
1968	60	84
1969	61	86
1970	65	90
1971	70	96
1972	72	99
1973	73	100
1974	74	105
1975	77	110
1976	81	114
1977	86	118
1978	91	124
1979	103	136
1980	115	149
1981	138	180
1982	165	214
1983	189	241
1984	214	271
1985	250	309
1986	283	353
1987	298	380
1988	323	413
1989	339	436
1990		449
1991		458

Sources:

Column 1 data from document obtained directly from INTV.
Column 2 data from NAB Documents 1007208, 1007210.

Exhibit D-4

Comparison of Broadcast Station Count Data (VHF Commercial and UHF Commercial)

	Individual Station Factbook Data [1]		Aggregate Factbook Data [2]	
Year	VHF Comm	UHF Comm	VHF Comm	UHF Comm
	[1]	[2]	[3]	[4]
1952	117	2		
1953	228	43	233	121
1954	295	53	297	114
1955	340	56	344	97
1956	380	58	381	90
1957	401	62	411	84
1958	424	63	433	77
1959	431	69	440	75
1960	441	70	451	76
1961	447	76	458	83
1962	459	80	466	91
1963	467	82	476	88
1964	473	85	481	88
1965	479	93	486	99
1966	484	102	492	118
1967	491	113	499	136
1968	493	137	499	163
1969	496	145	501	176
1970	499	159	503	179
1971	499	173	508	185
1972	501	176	510	187
1973	503	179	513	184
1974	505	186	514	192
1975	506	190	511	190
1976	510	194	515	196
1977	512	199	515	201
1978	513	206	515	209
1979	514	218	516	218
1980	515	234	519	237
1981	517	263	517	260
1982	520	299	519	294
1983	524	327	523	318
1984	529	355	520	363
1985	531	396	522	397
1986	533	440	524	444
1987	535	474	539	489
1988	541	503	545	516
1989	542	530	547	545
1990	545	544	547	551

	Individual Station Factbook Data [1]		Aggregate Factbook Data [2]	
Year	VHF Comm [1]	UHF Comm [2]	VHF Comm [3]	UHF Comm [4]
1991	548	561	551	567
1992	549	578	552	586
1993	550	586	561	584
1994	551	605	562	599

Notes:

[1] The *Factbook* lists the current station affiliation and the year of sign-on for all stations in operation as of 1994. Therefore, the individual station data does not reflect changes in station affiliation or stations that have gone off the air.

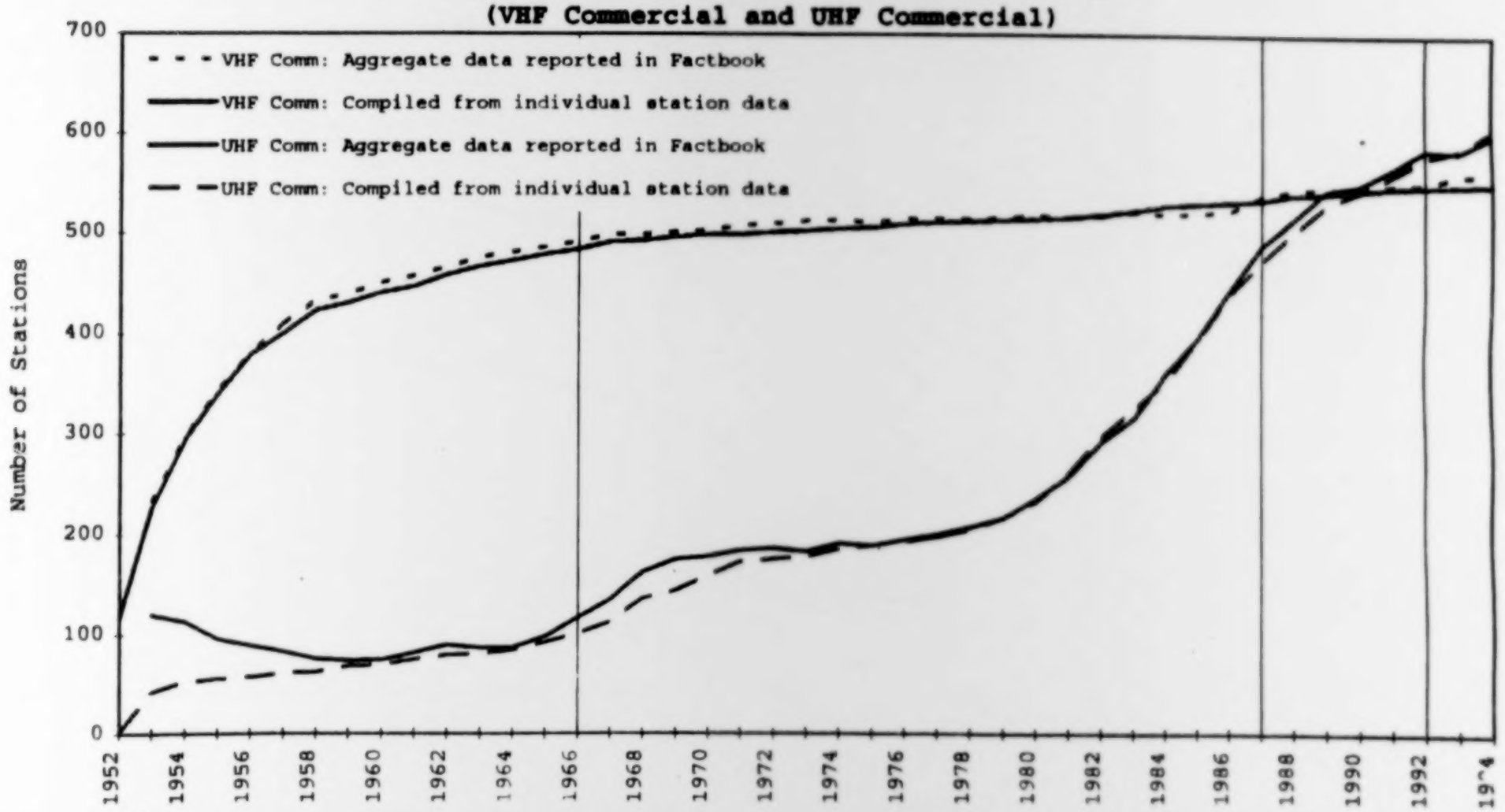
[2] The *Factbook* reports aggregate data as of January 1st of each year, but the data are listed here as the year-end total for the previous year. Thus, *Factbook* data for January 1, 1995 are displayed here as a 1994 en-of-year total.

Sources:

Individual station data obtained from Warren Publishing, Inc., Washington, D.C. Aggregate station data from *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

Exhibit D-4

Comparison of Broadcast Station Count Data
(VHF Commercial and UHF Commercial)

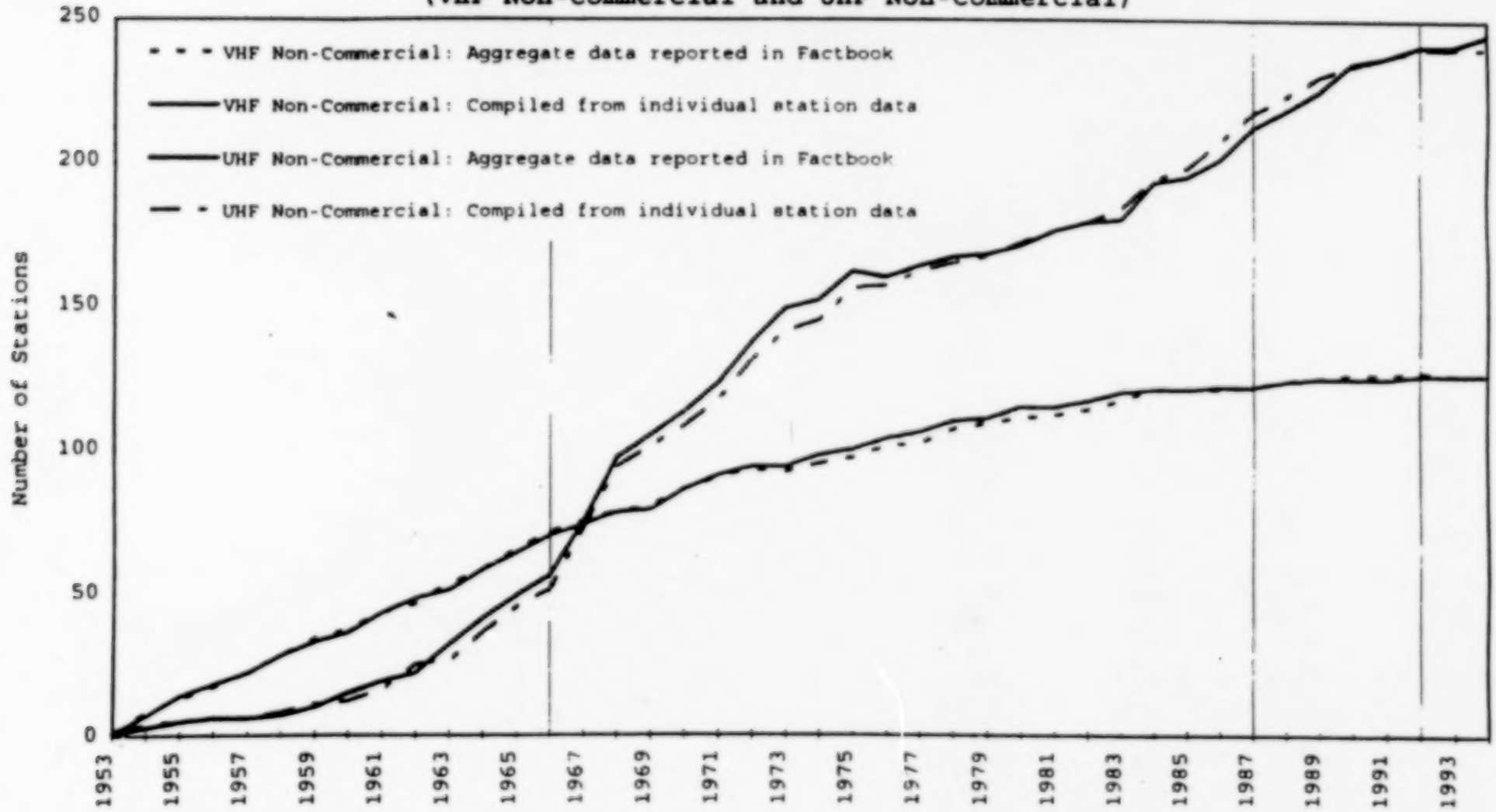


Note:
Vertical lines are placed at the initiation of must-carry rules in 1966, the voiding of must-carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Sources:
Individual station data obtained from Warren Publishing, Inc., Washington, D.C.
Aggregate station data from *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

Exhibit D-5

Comparison of Broadcast Station Count Data
(VHF Non-Commercial and UHF Non-Commercial)



Note:
Vertical lines are placed at the initiation of must-carry rules in 1966, the voiding of must-carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Sources:
Individual station data obtained from Warren Publishing, Inc., Washington, D.C.
Aggregate station data from Television & Cable Factbook, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

Exhibit D-5

Comparison of Broadcast Station Count Data
(VHF Non-Commercial and UHF Non-Commercial)

	Individual Station Factbook Data [1]		Aggregate Factbook Data [2]	
Year	VHF Non-Commercial [3] [1]	UHF Non-Commercial [3] [2]	VHF Non-Commercial [3]	UHF Non-Commercial [4]
1953	1	1	1	1
1954	7	4	8	3
1955	14	5	13	5
1956	18	6	17	6
1957	22	6	22	6
1958	28	8	28	7
1959	33	11	34	10
1960	36	12	37	15
1961	43	16	43	19
1962	48	25	46	22
1963	51	26	53	32
1964	58	36	58	41
1965	64	45	65	49
1966	70	51	71	56
1967	74	73	75	75
1968	78	94	78	97
1969	79	101	80	105
1970	86	108	86	113
1971	91	117	90	123
1972	94	131	93	137
1973	94	141	92	149
1974	98	145	95	152
1975	100	156	97	162
1976	104	157	101	160
1977	106	162	102	164
1978	110	165	107	167
1979	111	167	109	168
1980	115	172	111	171
1981	115	176	112	176
1982	117	179	114	179
1983	120	184	117	180
1984	121	194	121	193
1985	121	198	121	195
1986	122	207	121	201
1987	122	217	122	212
1988	124	223	124	218
1989	125	230	125	225
1990	125	234	126	235

Year	Individual Station Factbook Data [1]		Aggregate Factbook Data [2]	
	VHF Non-Commercial [3] [1]	UHF Non-Commercial [3] [2]	VHF Non-Commercial [3]	UHF Non-Commercial [4]
1991	125	237	126	237
1992	126	240	127	241
1993	126	240	126	241
1994	126	240	126	245

Notes:

[1] The *Factbook* lists the current station affiliation and the year of sign-on for all stations in operation as of 1994. Therefore, the individual station data does not reflect changes in station affiliation or stations that have gone off the air.

[2] The *Factbook* reports aggregate data as of January 1st of each year, but the data are listed here as the year-and total for the previous year. Thus, *Factbook* data for January 1, 1995 are displayed here as a 1994 end-of-year total.

[3] Includes public and educational stations.

Sources:

Individual station data obtained from Warren Publishing, Inc., Washington, D.C. Aggregate station data from *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

Exhibit D-6

Comparison of Data Sources for Number of Independent Stations

Year	INTV		Factbook
	1989 List [1]	1991 List [2]	Independents [1] [3]
1952	13	14	20
1953	19	25	31
1954	19	30	35
1955	22	34	40
1956	23	35	42
1957	23		42
1958	24	39	46
1959	26	42	49
1960	26	45	52
1961	28	48	54
1962	30	51	57
1963	31	52	58
1964	34	54	60
1965	38	57	63
1966	44	62	68
1967	50	70	77
1968	60	84	92
1969	61	86	93
1970	65	90	96
1971	70	96	101
1972	72	99	104
1973	73	100	106
1974	74	105	111
1975	77	110	114
1976	81	114	117
1977	86	118	121
1978	91	124	127
1979	103	136	137
1980	115	149	148
1981	138	180	177
1982	165	214	210
1983	189	241	236
1984	214	271	264
1985	250	309	301
1986	283	353	345
1987	298	380	373
1988	323	413	404
1989	339	436	428
1990		449	442
1991		458	458

Year	INTV 1989 List [1]	Factbook 1991 List [2]	Independents [1] [3]
1992			475
1993			483
1994			503

Note:

[1] Includes Fox affiliates.
Sources:

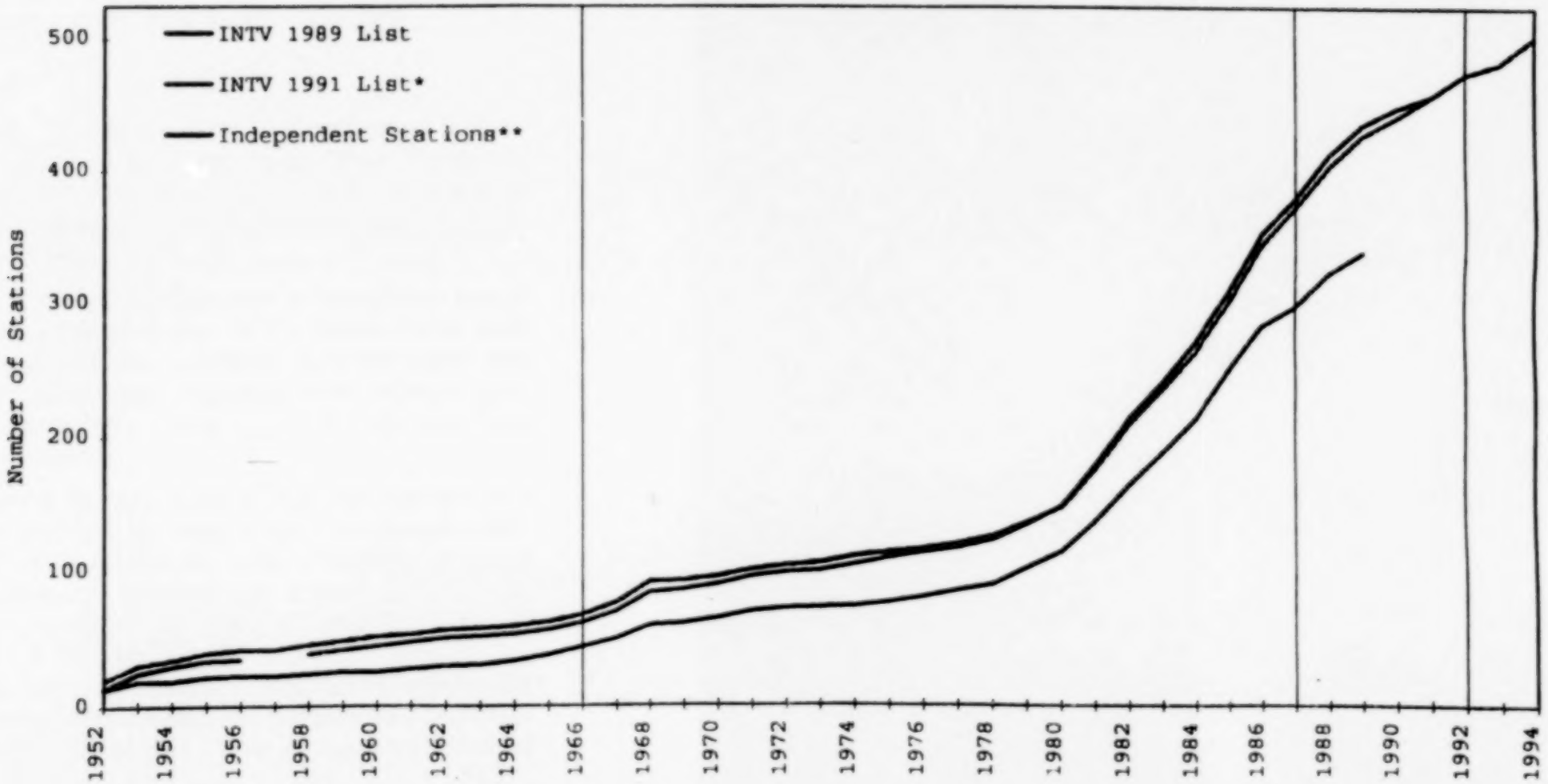
Column 1 data from document obtained directly from INTV.
Column 2 data from NAB Documents 1007208, 1007210.

Television station data obtained from Warren Publishing, Inc., Washington, D.C.

Date of operation data compiled from *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, pp. A-16 - A-1346.

Exhibit D-6

Comparison of Data Sources for Number of Independent Stations



Note:

* Number of independent stations not reported in 1957.

** Includes Fox affiliates.

Vertical lines are placed at the initiation of must-carry rules in 1966, the voiding of must-carry in 1987, and the reinstatement of must-carry with the 1992 Cable Act.

Sources:

1989 INTV data from document obtained directly from INTV.

1991 INTV data from NAB Documents 1007208, 1007210.

Independent station data from Warren Publishing, Inc., Washington, D.C. and *Television & Cable Factbook*, Stations Volume No. 63, Warren Publishing, Inc., Washington, D.C., 1995, p. iv.

[ATTACHMENT E]
DESCRIPTION OF DATA SOURCES AND METHODOLOGY FOR ANALYSIS OF STATIONS PROFILED IN THE INTV REPORT

I. Methodology

In May 1988, The Association of Independent Television Stations published a report titled "Free Television Under Siege" (INTV report) that included case histories of 46 stations alleging unfair actions taken against them by local cable systems.

The first step of my analysis was to compile a list of the TV stations profiled in the INTV report. For each station, the nature of the complaint and the cable system(s) against whom the complaint was leveled were noted. This information is listed in the left half of Exhibit E-1 (first four columns).

For each station, the following information was obtained from the *Factbook* [35] for the most recent time period available: city and state of license, ADI (Arbitron Area of Dominantt Influence), whether the station is UHF, or VHF, and station affiliation. This information, listed in the right half of Exhibit E-1 (columns 5 through 9), shows that the stations profiled in the INTV report are located in various cities around the country and are overwhelmingly UHF (39 of 46). One is currently listed as

---

[35] Seven of the 46 stations could not be found in the 1994 *Factbook*. A literature search on those seven stations revealed the fact that four of them had changed call letters since 1988, one is operating as a satellite, and two are no longer operating. (The details of the literature search are reported below.) The four with changed call letters were located in the 1994 *Factbook* under the new call letters. (In Exhibit E-1 they are listed under the original call letters, with the new call letters shown in parentheses.) The satellite station was found in the 1994 *Factbook* under the call letters of its source station. Finally, the two stations no longer in operation were found in earlier editions of the *Factbook*.

a public/educational station, 24 are listed as Fox affiliates, and the remainder are independents.

II. Summary of Literature Search on TV Stations from INTV Report Not Listed in *1994 Television & Cable Factbook*

Of the 46 profiled stations, 8 [36] are not listed in the 1994 *Factbook* under the call letters given in the INTV report. The 1993 *Factbook* indicated that one of the eight had changed call letters. A literature search was conducted on the remaining seven stations to determine whether they are still in operation. The following paragraphs summarize the results of the sarch.

KGMC-TV (Oklahoma City, OK [37]): This station has been operating as KOCB since at least 1991. The station owner filed for bankruptcy in February, 1989, for unknown reasons.[38] Heritage Media, the owner of KAUT-TV merged with KOKH-TV; see below), offered to purchase the interest of KGMC's second-largest creditor with the intention of shutting KGMC down. This proposal was

[36] Another station in the INTV report, WVFT of Richmond, VA, was listed in the *Factbook* as being a satellite of WJPR-TV in Lynchburg. In addition, the *Factbook* only lists WJPR as being carried by the cited system in 1990 and 1993, while listing neither station as being carried in 1988. An article published in the *FCC Digest* ("FCC News Release: FCC Consents to the Assignment of Licenses for Two Roanoke/Lynchburg, VA, Television Stations," 9/11/91, Vol. 9, No. 177), however, indicates that it is WJPR that operates as a satellite of WVFT. Neither station could be reached by telephone to confirm which is the statellite station, so it is assumed that the *FCC Digest* account is correct and that WVFT is not a satellite.

[37] City and State of license in parentheses.

[38] "Breach in Security: Bankruptcy Court Ruling May Further Discourage Bank Lending to Broadcasters," *Broadcasting*, 7/30/90, p. 64.

apparently denied by US Bankruptcy Court on 11/3/89.[39] While no mention of a transaction arose in the literature search, the 1991 *Factbook* listed KGMC as having changed call letters to KOCB.

KAUT-TV (KTLC-TV) (Oklahoma City, OK): This station was reportedly bought by and merged with KOKH-TV; KAUT became an educational TV station and changed its call letters to KTLC-TV. KOKH announced plans to buy KAUT on 8/23/91. An article stated that "It is a 1st step in positioning designed to eventually give serious competition to the major network affiliate stations." [40] A 1993 *Broadcasting & Cable* article claimed that this merger demonstrated the financial benefits of consolidation for independent stations. 1992 revenue for KOKH was expected to rise by 40% over 1991.[41] The 1992 *Factbook* indicates the change in call letters to KTLC.

WAWA-TV (Rome, GA): This station is currently operating as station WTLK. As of 1991, the owner, Sudbrink Broadcasting, was trying to have the station's license reclassified from Rome to Atlanta, apparently so that the Atlanta cable systems would not have to pay copyright fees to carry WTLK.[42] In the fall of 1990, the owner spent $1 million to increase the station's broadcasting range. The station's format was to be unique: the television equivalent of a talk radio station.[43]

[39] "Bank Denied Foreclosure on KGMC Channel 34 TV," *Journal Record*, Oklahoma City, OK., 11/3/89, pp. 1-2.

[40] "KOKH-TV Fox 25 to Challenge Major Network Affiliates," *Journal Record*, Oklahoma City, OK., 8/23/91, pp. 1, 8.

[41] See Geoffrey Foisie, "Independents Network for Survival," *Broadcasting & Cable*, 3/1/93, Vol. 123, No. 9, pp. 11-17.

[42] Cable systems that want to carry stations whose signal originates more than 35 miles from their market must pay copyright fees (article does not say to whom fees must be paid).

[43] "Rome TV Station Talks Its Way Into Atlanta," *Georgia Trend*, June 1991, p. 22.

WCVX-TV (Vineyard Haven, MA): This station is scheduled to operate as a satellite station of WQTV (Ch. 68, Ind.) in Boston. It was formerly owned by a savings and loan company that subsequently failed and was taken over by Resolution Trust Corp. in April 1991.[44] The station went dark in July 1991 after the RTC could not find a buyer. At the time, the station was reportedly incurring operating losses of $50,000 monthly. RTC sold it in 1993 to Boston University Communications, which received approval on 10/18/94 to operate the station as a satellite of WQTV.

WHCT-TV (Hartford, CT): This station went off the air in April 1991 and is apparently no longer operating. In 1987, the Hartford market had three independent TV stations, while "[i]ndustry doctrine says that only the top 15 markets can support more than one independent." At that time, observers felt that WHCT would probably be the first of the three stations to go off the air. WHCT's General Manager stated that while the station started without much cable carriage, by April 1991 it was on 90 percent of area systems. He claimed the station now had the "latitude and freedom" to gain higher ratings.[45] The owner filed for bankruptcy in 1988 and then shut down the station in 1991.[46]

WVRN-TV (Richmond, VA): This station is no longer in operation. In September 1988, WRLH-TV, another independent Richmond station, bought WVRN's assets and returned the license to the FCC.[47] Note that

[44] "Big Brother takes over TV Station. (US Resolution Trust Corp. acquires WCVX-TV, Vineyard Haven, MA)," *Broadcasting*, 4/22/91, p. 55.

[45] "Death May Loom in 3-Way TV Shootout," *Hartford Courant*, 6/26/87, p. 12.

[46] "Astroline Signs Off After Six-Year Battle," *Hartford Courant*, 4/10/91, pp. C1-C2.

[47] See Foisie, *op. cit.*

WRLH-TV was also listed in "Free TV" as having been affected by the channel switching of Storer Cable of Chesterfield, VA. It is still in operation and being carried by this system.

WYAH-TV (Portsmouth, VA): This station has been operating under the call letters WGNT since approximately 1989. No further information on this station was found in the literature search. While the 1994 *Factbook* did not list WYAH, it did list WGNT as operating on the same channel and serving the same area as WYAH. A phone call made to WGNT confirmed that the station had changed call letters. Station personnel said the call letter change occurred five years ago.

III. Conclusions

Forty-two of the 46 stations listed in the INTV report are still in operation as commercial stations. Of the four that are not, two are not in service, one is scheduled to become a statellite station, and one has become an educational station. Summary information on these four stations is provided in Exhibit E-2. In three of these four cases, entry of new commercial stations has since occurred in the affected markets so that there has been no net change in the number of commercial stations in operation. A summary of the operational status of all 46 stations, grouped according to the nature of the complaints leveled against cable systems, is shown in Exhibit E-3.

Exhibi 1

Broadcast Television Stations Listed in the INTV Report

From INTV Report				From *Television & Cable Factbook*				
Station [1]	Cited Cable System Owner [2]	Cited System Location(s) [3]	Cited Action [4]	City of License [5]	State [6]	ADI [7]	VHF/UHF [8]	Network Affiliation (1993) [9]
KADY	Jones Intercable	Oxnard	Channel Switch	Oxnard	CA	Santa Barbara-Santa Maria-San Luis Obispo	UHF	Ind
	Owner Not Specified	Ventura City	Channel Switch					
	Owner Not Specified	Santa Barbara	Lack of Carriage					
	Owner Not Specified	Simi Valley	Other					
KAME	TCI	North Tahoe	Channel Switch	Reno	NV	Reno	UHF	Fox
	TCI	South Tahoe	Channel Switch					
	TCI	Carson City	Channel Switch					
KAUT (KTLC)	Cox	Oklahoma City	Channel Switch	Oklahoma City	OK	Oklahoma City	UHF	Non-Commercial
KBHK-TV	TCI	San Francisco area	Channel Switch	San Francisco	CA	San Francisco	UHF	Ind
KCIK	Owner Not Specified	Las Cruces, NM	Channel Switch	El Paso	TX	El Paso	UHF	Fox
KCPQ	TCI	Seattle-area systems	Channel Switch	Tacoma	WA	Seattle-Tacoma	VHF	Fox
KGMC (KOCB)	MultiMedia	Chickasha, OK	Channel Switch	Oklahoma City	OK	Oklahoma City	UHF	Ind
	Cox	Oklahoma City	Channel Switch					
KMCI	Sunflower Cablevision	Lawrence	Lack of Carriage	Lawrence	KS	Kansas City	UHF	Ind
KOKH	Cox	Oklahoma City	Channel Switch; Programming Conflict	Oklahoma City	OK	Oklahoma City	UHF	Fox
KOOG	TCI	Ogeden	Lack of Carriage	Ogden	UT	Salt Lake City	UHF	Ind
		Salt Lake City area systems	Lack of Carriage					
KPTV	TCI	Corvallis, OR	Channel Switch	Portland	OR	Portland, OR	VHF	Ind
	TCI	Lebanon, OR	Channel Switch					
	TCI	Sweet Home, OR	Channel Switch					

Exhib. 1

Broadcast Television Stations Listed in the INTV Report

From INTV Report				From Television & Cable Factbook				
Station [1]	Cited Cable System Owner [2]	Cited System Location(s) [3]	Cited Action [4]	City of License [5]	State [6]	ADI [7]	VHF/UHF [8]	Network Affiliation (1993) [9]
KPTV (cont.)	TCI	Eugene, OR	Channel Switch					
KRIV			Channel Switch	Houston	TX	Houston	UHF	Fox
KSAS-TV	Owner Not Specified	Wichita	Programming Conflict	Wichita	KS	Wichita-Hutchinson	UHF	Fox
KSTW	TCI	Seattle-area systems	Channel Switch	Tacoma	WA	Seattle-Tacoma	VHF	Ind
KTLA	Owner Not Specified	Garden Grove	Channel Switch	Los Angeles	CA	Los Angeles	VHF	Ind
KTVU	TCI	San Francisco area	Channel Switch	Oakland	CA	San Francisco	VHF	Fox
WAWA (WTLK)	Owner Not Specified	Cartersville, GA	Lack of Carriage	Rome	GA	Atlanta	UHF	Ind
WAYK (WIRB)	ATC ATC	Melbourne Orlando	High Fees Lack of Carriage	Melbourne	FL	Orlando-Daytona Beach-Melbourne	UHF	Ind
WCCB	Vision Cable of NC	Charlotte	Channel Switch	Charlotte	NC	Charlotte	UHF	Fox
WCVX	TCI	Barnstable Co.	Lack of Carriage	Vineyard Haven	MA	Providence, RI - New Bedford, MA	UHF	Ind
WDBB	Comcast	Tuscaloosa	Channel Switch	Tuscaloosa	AL	Tuscaloosa	UHF	Fox
WDZL	Selkirk Selkirk Storer Storer Storer Miami Telecom (TCI)	Ft. Lauderdale Hallandale North Dade South Dade Broward Miami	Channel Switch Channel Switch Channel Switch Channel Switch Channel Switch Channel Switch	Miami	FL	Miami-Fort Lauderdale	UHF	Ind
WHCT	United Group W Group W	Hartford Middletown Danbury	Lack of Carriage Lack of Carriage Lack of Carriage	Hartford	CT	Hartford-New Haven	UHF	Ind

Exhibit 1

Broadcast Television Stations Listed in the INTV Report

From INTV Report				From Television & Cable Factbook				
Station [1]	Cited Cable System Owner [2]	Cited System Location(s) [3]	Cited Action [4]	City of License [5]	State [6]	ADI [7]	VHF/UHF [8]	Network Affiliation (1993) [9]
WHCT (cont.)	Paul Hancock	Housatonic	Lack of Carriage					
	Paul Hancock	New Milford	Lack of Carriage					
	Paul Hancock	Mid-Connecticut	Lack of Carriage					
	Storer	Clinton	Lack of Carriage					
	Storer	Groton	Lack of Carriage					
	Eatern Connecticut Cablevision	New London Co.	Lack of Carriage					
	Cablevision of Connecticut	Southern CT	Lack of Carriage					
	Cablevision of Southern Connecticut	New Haven (?)	Lack of Carriage					
WLAX	Owner Not Specified	La Crosse	Channel Switch	La Crosse	WI	La Crosse-Eau Claire	UHF	Fox
WLIG	Cablevision	Long Island	Lack of Carriage	Riverhead	NY	New York	UHF	Ind
WMFP			Lack of Carriage	Lawrence	MA	Boston	UHF	Ind
WMSN	TCI	Madison	Lack of Carriage	Madison	WI	Madison	UHF	Fox
WNDS	Warner Cable	Nashua	Programming Conflict	Derry	NH	Boston	UHF	Ind
WOFL	TCI	Daytona Beach	Channel Switch	Orlando	FL	Orlando-Daytona Beach-Melbourne	UHF	Fox
	TCI	Titusville	Channel Switch					
	TCI	Barefoot Bay	Channel Switch					
	Owner Not Specified	Cocoa Beach	Channel Switch					
	Owner Not Specified	Lake County	Channel Switch					
WPGX	Comcast	Panama City, FL	Lack of Carriage	Panama City	FL	Panama City	UHF	Fox
WPMT	Warner Cable	Chambersburg, PA	Lack of Carriage	York	PA	Harrisburg-York-Lancaster-Lebanon	UHF	Fox

Exhibi. 1

Broadcast Television Stations Listed in the INTV Report

From INTV Report				From Television & Cable Factbook				
Station [1]	Cited Cable System Owner [2]	Cited System Location(s) [3]	Cited Action [4]	City of License [5]	State [6]	ADI [7]	VHF/UHF [8]	Network Affiliation (1993) [9]
WTZA (cont.)	Dutchess Cablevison Owner Not Specified		Channel Switch Lack of Carriage					
WUAB	Cablevision Systems	6 systems in Cleveland suburbs	Channel Switch	Lorain	OH	Cleveland	UHF	Ind
WUTV	TCI	Buffalo	Channel Switch	Buffalo	NY	Buffalo	UHF	Fox
WVFT	ATC	Lynchburg	Lack of Carriage	Roanoke	VA	Roanoke-Lynchburg, VA	UHF	Fox
WVRN	Storer	Chesterfield, VA	Channel Switch	Richmond	VA	Richmond	UHF	Ind
WWCP	Warner Cable	Clearfield	Lack of Carriage	Johnstown	PA	Johnstown-Altoona	VHF	Fox
WXMI	Lakeland Cable	South Haven, MI	Lack of Carriage	Grand Rapids	MI	Grand Rapids-Kalamazoo Battle Creek	UHF	Fox
WYAH (WGNT)	Cox Cable	Norfolk-Portsmouth-Virginia Beach	Channel Switch	Portsmouth	VA	Norfolk-Portsmouth-Newport News-Hampton	UHF	Ind
WZTV	Daniels (United Artsists Cable) Daniels (United Artsists Cable) TCI TCI	Gallitin Murfreesboro Shelbyville Manchester	Channel Switch Channel Switch Channel Switch Channel Switch	Nashville	TN	Nashville	UHF	Fox

Notes:
Call letters in parenthesis indicate change in station's call letters since publication of INTV report. [Column 1]
For stations no longer in operation, VHF/UHF designation and network affiliation obtained from last *Factbook* edition in which station was listed. For WCVX and WHCT, the 1991 *Factbook* was used. For WVRN, the 1989 *Factbook* was used. [Columns 5-9]

Sources:
Free Television Under Siege: Typical And Illustrative Case Histories of Anti-Competitive Conduct By Cable Television Systems, The Association of Independent Television Stations, Inc., May 1988.
Television & Cable Factbook, Stations Volume, Warren Publishing, Inc., Washington, D.C., 1989, 1990, 1991 and 1994 Editions.

Exhibit E-2

Stations Out of Service or Not Operating as Commercial Stations

	Call Letters	City of License	Notes
Stations Out of Service:			
	WHCT	Hartford, CT	*Out of service in April 1991.*
	WVRN	Richmond, VA	*Assets bought by WRLH and license returned to FCC in 1988.*
Stations Operating As Satellite Stations:			
	WCVX	Vineyard Haven, MA	*Out of service since August 1991; scheduled to become satellite of WQTV in Boston, MA.*
Stations Operating as Public or Educational Stations:			
	KAUT	Oklahoma City, OK	*Merged commercial operations with KOKH-TV in 1991; changed call letters to KTLC.*
Number of Stations Making a Complaint:			**46**

Sources:
Free Television Under Siege: Typical And Illustrative Case Histories of Anti-Competitive Conduct By Cable Television Systems, The Association of Independent Television Stations, Inc., May 1988.
Television & Cable Factbook, Stations Volume, Warren Publishing, Inc., Washington, D.C., 1989, 1990, 1991 and 1994 Editions.

Exhibit E-3

Operational Status of Profiled Stations
(Grouped by Nature of Complaint)

			No. of Stations	Share of Total
Number of Stations Making a Complaint:			46	100.00%
Number of Stations Complaining Only of Channel Switching:			24	52.17%
Stations In Service:			22	47.83%
Stations Out of Service or Not Operating as Commercial Stations:			2	4.35%
	KAUT[1]	Oklahoma City, OK	*Operating as educational TV station.*	
	WVRN	Richmond, VA	*Out of service; license returned to FCC.*	
Number of Stations Complaining Only of Lack of Carriage:			14	30.43%
Stations In Service:			12	26.09%
Stations Out of Service or Not Operating as Commercial Stations:			2	4.35%
	WCVX	Vineyard Haven, MA	*Out of service since August 1991; scheduled to become satellite.*	
	WHCT	Hartford, CT	*Out of service in April 1991.*	
Number of Stations Complaining Only of Programming Conflicts:			2	4.35%
Stations In Service:			2	4.35%
Stations Out of Service or Not Operating as Commercial Stations:			0	0.00%
Number of Stations Complaining of Multiple Actions[2]:			6	13.04%
Stations In Service:			6	13.04%
Stations Out of Service or Not Operating as Commercial Stations:			0	0.00%

Notes:
[1]Changed call letters to KTLC.
[2]Stations citing one system for several actions or stations citing more than one system for different actions.

Sources:
Free Television Under Siege: Typical And Illustrative Case Histories of Anti-Competitive Conduct By Cable Television Systems, The Association of Independent Television Stations, Inc., May 1988.
Television & Cable Factbook, Stations Volume, Warren Publishing, Inc., Washington, D.C., 1989, 1990, 1991 and 1994 Editions.

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.B

* * * *

Dated: May 26, 1995

* * * *

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF JAMES N. DERTOUZOS

1. I am employed as a public policy analyst by the RAND Corporation, a nonprofit research institution funded primarily by government agencies and private foundations. Since receiving my Ph.D. in economics from Stanford in 1979, I have conducted research on a wide variety of topics, including the economics of advertising, cable television, newspaper markets, and other mass media industries. My non proprietary policy research has been sponsored by the Federal Trade Commission, Small Business Administration, the Defense Department, the National Science Foundation, the Department of Labor, the U.S. Army, the Sloan Foundation, RAND's Institute for Civil Justice, and the Kellogg Foundation. I twice provided Congressional testimony on the causes and impacts of media concentration. In 1990, I received a commendation from the Office of the Secretary of Defense for my work assessing the effectiveness of alternative advertising strategies in support of the All-volunteer Army.

2. I have also conducted research as an independent consultant to the National Association of Broadcasters, the National Cable Television Association, Viacom, and on behalf of several law firms representing media companies, including cable television and newspaper firms. In support of litigation, I have studied media competition in local food retail, employment, and entertainment advertising markets.

3. In addition to my research activities, I have served as RAND's Resident Scholar in Economics and as an Associate Corporate Research Manager. I am also on the faculty of the RAND Graduate School of Policy

Studies and have previously taught courses at Stanford, UCLA, and the Annenberg School of Communications at USC. I have supervised six doctoral dissertations and regularly teach graduate courses in microeconomic theory, econometrics, the regulation of monopoly, and the economics of the mass media. My vitae, attached as Appendix B, provides a summary of my educational background. research activities, and employment history.

4. I have been retained by counsel for defendants to a) examine the importance of cable advertising to cable operators and the possible effects this will have on local broadcast stations, and b) examine the impact of must carry rules on the displacement of cable program networks. In coming to my opinions, I have relied on over twenty years of research, teaching and consulting experience related to the economics of advertising, cable television, and other mass media industries. In addition, I have studied internal documents provided by counsel that describe the strategic plans of MSOs and cable programmers. I have relied on trade publications, journal articles, and publicly available data on trends in advertising, interconnects, and channel capacity. Finally, I have analyzed a data set describing the operations of cable operators who provided information to the FCC in support of the 1992 effort to establish benchmarks for price regulation.

5. As a result of my analysis, I have concluded that important social benefits will be achieved by requiring cable operators to carry local broadcast stations that request it. Must carry requirements will benefit local broadcast stations whose economic vitality is threatened by the lack of carriage, promote the welfare of consumers who do not subscribe to cable, and limit potential abuses of economic power on the part of cable operators, including the incentive of operators to discriminate against local broadcasters in order to enhance advertising revenues. These overall conclusions are based on the following:

a. Local broadcast stations compete with cable operators for audiences and for advertising revenues. Such

competition can significantly reduce the market power of cable operators. Such a reduction in market power benefits television viewers, firms wishing to promote goods and services, and the consumers of advertised products.

b. In the absence of must carry, cable operators will have incentives to limit potential competition from local broadcasters. By denying channel access to broadcasters, cable operators will gain an advantage in competing for audience and in the increasingly important market for advertising.

c. Already totaling well over a billion dollars, the importance of local advertising to cable operators is increasing rapidly. With revenue streams from basic cable subscription fees constrained by regulations, emerging competitive forces, and market saturation, the high profit margins and potential for double-digit growth make local advertising a primary target in the strategic planning of cable operators. The incentives on the part of operators to suppress local broadcast competition can be expected to increase over time, thereby making must carry requirements even more important in the future.

d. The financial burden asociated with the possible displacement of programming due to must carry will not be of long-run significance to cable operators and programmers. For some systems with limited capacity, must carry requirements could cause the temporary elimination of a cable network or pay per view channel. However, with the continuing expansion in channel capacity due to equipment upgrades, fiber optics, and digital technologies, it is unlikely that these consequences will be important to cable programmers, system operators or their subscribers.

6. In evaluating a local cable system's incentives to drop a local broadcaster, it is instructive to first identify the costs and benefits that change following the operator's decision. First, the system could lose cable subscribers who desire broadcast programming as part of the cable

package. These costs are potentially offset by incremental revenues from the following sources:

a. In cases where channel capacity is limited, the elimination of a broadcast station could allow the addition of a more profitable programming option such as a cable network. It is crucial to recognize that enhanced profitability may not be due to higher valuation placed on the added programming by local subscribers. For example, a MSO that has an equity interest in a cable network will have clear-cut incentives to favor its own programming. Since programming costs have already been incurred centrally, such vertically integrated MSOs will wish to maximize audiences nationally, even if local consumers prefer a broadcast alternative. Indeed, all system operators will tend to favor non-broadcast programming, all things equal. This is because they will be gaining additional premium service, national spot advertising, and local spot advertising revenues that are not available when channels are occupied by local broadcasters.

b. Cable operators will also have strong incentives to diminish the competition for subscribers provided by broadcast stations. By not gaining wired access to cable subscribers, broadcasters with weak signals will be unable to achieve the audience penetration necessary to support investments in programming. As a result of the reduced competition, operators will benefit from greater revenues due to an ability to enlist more subscribers and charge higher prices. In addition, dropped broadcasters will be unable to compete effectively for local advertising.

7. From this discussion, it is clear that cable operators will have greater incentives to drop broadcasters when revenues from non-basic services (e.g., advertising or pay-per-view) become relatively more important. Also, operaotrs are most likely to drop broadcasters who, as a result of lack of carriage, suffer a competitive disadvantage.

8. In 1993, local advertising represented about 4 percent of local operator revenue from all sources. While

totaling nearly a billion dollars, this volume falls significantly short of cables "fair share" of local expenditures on broadcast advertising. To illustrate, programming found on cable (and only cable) attracts over 25 percent of the viewing audience in comparison with the shares of over-the-air television stations (independents and stations affiliated with the major broadcast networks). In contrast, cable operator advertising revenues, on average, amount to only 2 percent of the local spot market.[1]

9. The difference between the actual 2 percent share and the 25 percent potential share represents an essential target of opportunity for cable system operators.[2] Indeed, this revenue category has grown significantly in recent years. Table 1 documents growth of local advertising for operators since 1993 and provides projections for the year 2000. Between 1993 and 1994, advertising sales by operators grew by nearly 30%, with double-digit annual increases expected to continue through the next decade.[3]

---

[1] The local spot market consists of commercial time purchased by local advertisers on programs offered by individual stations (in contrast to network buys that cover numerous local markets). Coble TV ad billings were reported in Cable TV Advertising, Paul Kagan Associates, Inc., October 26, 1994.

[2] See, for example, Carl Weinschenk, "Local Ad Sales Come of Age," Cable Marketing, April 1988 and "Cable 88: Fiscally Upbeat, Governmentally Concerned," Broadcasting, May 2, 1988. In addition, internal documents describing the strategic plans of multiple system operators (MSOs) such as TCI, Time-Warner, and Jones Intercable place significant emphasis on local advertising growth. For exampel, see JI030631-0323314.

[3] These estimates appear to be conservative in comparison with the aforementioned internal business projections of MSOs. For a variety of reasons outlined below, I believe that these latter documents, which paint an even more optimistic future for local cable advertising, are more accurate. See, for example, "Cable Puts Its Future in Broadcasting," Broadcasting, December 7, 1987.

Table 1

Projected Revenue Growth for Cable Operators, 1993-2000

Revenue Source:	1993	1994	1995	1996	2000	1993-2000 Annual Growth
Basic sub rev	15,170	14,995	16,013	17,024	21,274	4.9%
Premium sub rev	4,493	4,786	5,121	5,421	6,639	5.7%
Pay per view rev	556	668	804	969	1,422	14.4%
Net advertising	984	1,256	1,456	1,660	2,589	14.8%
Total	21,203	21,705	23,394	25,074	31,924	6.0%

Source: 1994 Paul Kagan Associates, Inc. Excludes home shopping, digital, telephone, and mini-pay revenues.

10. Advertising growth is considered to be essential to cable system economic success because other revenue and profit streams are likely to be constrained in the future environment. For example:

a. After over a decade of rapid growth in the number of subscribers, the recent increases in market penetration (currently, about 64 percent of all households subscribe to cable) have been small and future increases are likely to slow significantly. The vast majority (about 95 percent) of households are now passed by cable and the bulk of subscriber growth has to come from consumers who have voluntarily chosen not to subscribe (as opposed to those who could not subscribe because cable was unavailable).

b. Revenues and profits from basic services (service tiers that provide a menu of channels, including broadcast signals, for a monthy fee) are currently limited by cable rate regulation as determined by the 1992 Cable Act. Note, in Table 1, that basic subscriber revenue actually fell between 1993 and 1994 and is expected to have a modest 4.9% annual growth rate through the year 2000. This rate barely exceeds the rate of inflation, suggesting no growth in real income (revenues net of costs, adjusted for inflation).

11. For these reasons, advertising has an economic significance that far exceeds its share of current revenues. Note, for example, that over 50% of total revenue growth (including basic and premium service fees, pay per view, and local ad sales) from 1993 to 1994 can be attributed to local advertising volume. In addition, with an expected inflation rate of about 4.5%, the projected growth to the year 2000 in overall revenue [1] results in a total increase (in 1993 dollars) of about $2,255 million dollars.[2] Over the same period, ad dollars (in real, 1993 dollars) are expected to increase by $918 million. Thus, 40% of the anticipated growth is due to advertising.

12. Advertising's economic significance is further magnified because profit margins are especially high on these incremental revenues. Advertising revenus do not rquire large recuring expenses for programming, subscriber services, or significant variable costs after investing in the requisite technology and the development of a competent sales force. This suggests that half (or even more) of income growth in the foreseeable future will come from the sales of local advertising.

13. In the past, local advertising growth was hampered by several factors.[1] In comparison with free television,

[1] As noted, these projections exclude other sources of revenue growth from nontraditional services (such as telephone, shopping, and data services). Although such revenue streams could become important at some future date, any attempt to estimate them is purely speculative. On the other hand, projections based on the recent pattern of rapid growth in advertising have a much stronger basis.

[2] At an inflation rate of 4.5% annually, a dollar in 2000 would have to be deflated by 1.361 to make it comparable to 1993. Thus, the $31,924 million projected for 2000 becomes 23,458 in 1993 dollars, an increase of $2,233 in real dollars.

[1] Such deficiencies were cited in a survey of 225 advertisers and agencies. National Association of Broadcasters, How Leading Advertisers and Agencies Use Cable Television, Research and Planning Report, Oct/Nov 1989.

cable suffers from less than full market penetration since only sixty percent of television households subscribe to cable. Also, cable network audiences are fragmented with the highest rated cable programs attracting a fraction of a broadcast network's share. Finally, it is cumbersome to place ads with the numerous franchises that carve up the geographic areas that many advertisers are interested in reaching.

14. Due to the low volume of advertising demand, adequate market mechanisms have not emerged for rating cable audiences or for monitoring operator performance in running advertisements. Often, advertisers do not know much about the probable viewers and can not be certain that their commercial has even been aired as planned. Finally, cable operators have not had the volume to justify the creation of adequate sales and marketing departments or to build essential relationships with ad agency representatives.

15. Many of these limitations are being overcome with the emergence of new technologies.[2] They are likely to become even less of a factor in the future. For example,

a. New technologies allow for the simultaneous insertion of spot advertising on multiple networks. This eliminates the audience fragmentation problem. The cumulative audience shares of cable networks available for simultaneous insertion compare quite favorably with those of network programming. In addition, these new technologies enhance quality and make it possible to audit system performance in terms of the timing and placement of ads.

[2] For discussions of the new technologies and what they imply for cable advertising, see Lenny Melamedas, "Selecting the Right Ad Insertion System, Cable Marketing, April 1988, Chuck Moozakis, "Ad Insertion Heats Up," Cable Television Business, August 15, 1988, and Michael O. Wirth, "Cable's Impact on Over-the-Air Broadcasting," The Journal of Media Economics, Fall 1990.

b. At the same time, such technologies permit selective insertion within subsets of available networks. For advertisers wishing to promote specialized products or services, this allows for efficient audience segmentation and a more targeted advertising strategy than is typically possible via over-the-air broadcast stations.

c. The requisite technologies for digital insertion are being rapidly adopted, particularly by larger systems that can spread the fixed costs of equipment over a larger audience base. Still, there remains room for growth, since about 20% of all subscribers are served by systems that currently do not have the ability to insert local spot advertising.

16. In recent years, the industry has seen the rapid emergence of cooperative marketing, pricing, and investment strategies linking adjacent cable systems.[1] There are currently over 100 such interconnects, representing the majority of cable subscribers.[2] Most of these are "soft" interconnects, relying on the broader proliferation of advertising copy (often in tape format) to multiple headends in a region. However, more and more of the interconnects are "hard," utilizing microwave and wire transmission, thereby increasing reliability and reducing the costs of ad insertion in multiple locations spanning the narrow geographic markets served by individual systems. Finally, satellite technologies are now in use in Los Angeles and New York. In such markets, digital and insertion and distribution to multiple headends has resulted in dramatic increases in local advertising, particularly in categories such as automobile, entertainment, and local retail advertising.

---

[1] For a description of the Los Angeles interconnect, Adlink, see Linda Moss, "Adlink to the Future," Multichannel News, March 27, 1995.

[2] Cable TV Factbook, 1994.

17. Due to acquisitions and strategic swaps of cable franchises, regional clustering of multiple system operators is becoming more prevalent. Such combinations serve a similar purpose to the aforementioned interconnect collaboratives, but without many of the attendant difficulties in negotiating joint business strategies. For example, TCI is about to buy Chronicle Publications cable operations in Northern California and is now close to monopolizing 85% of the market in the San Francisco region.[1] This places TCI in direct competition with the broadcasters who previously enjoyed a comparative advantage in reaching the whole Bay Area.

18. With the adoption of digital diffusion technologies, increased regioual concentration of MSOs, the maturation of cooperative agreements linking adjacent systems, and the development of a skilled sales force, cable is becoming a significant force in local advertising. As in the San Francisco Bay area, the larger cable geographic markets will soon coincide with areas traditionally reached most effectively by over-the-air broadcasters. This places cable in direct competition with local broadcasters for advertising dollars. This will be particularly true of independent broadcasters having no network affiliation.

19. In comparison with earlier years, cable operators, especially when in MSO regional clusters, will be well-positioned to compete with broadcasters for advertising. They will enjoy a significant advantage due to their ability to narrow cast (identify consumer preferences through their behavior in viewing specialized programming or providing sub-regional or "zoned" advertising options). To the extent that advertisers wish to market goods or services to narrow demographic groups (specialized by taste, place of business, or residence), they will turn to cable. In contrast, broadcasters have no countervailing advantage except for access to the supplemental audience that

---

[1] Multichannel News, March 6, 1959.

does not subscribe to cable and only watches free over-the-air television.

20. The importance of over-the-air broadcasting as a competitor to cable is well recognized. In fact, early standards for effective competition, examining cable operators from local rate regulation, were based on the availability of broadcast signals. For example,[1] with 5 or more over-the-air signals, the market power of cable operators is significantly reduced and subscribers benefit lower prices (per program received). At the same time, the addition of more than 5 over-the-air signals does not appear to have the same effects. This may be due to the fact that additional signals do not, in geenral, provide significant competition, primarily because of the unavailability of quality programming options for additional broadcasters. However, with the anticipated explosion in program availability (there have been as many as 100 cable network startups reported in anticipation of channel capacity increases as well as the emergence of alternative outlets such as direct broadcast satellites, microwave, and video dial tone services) broadcasters will have access to higher quality programming.[1] Thus, it is likely that additional broadcasters could well become competitive factors in their local markets, but only if they have access to cabled homes in addition to their supplemental over-the-air audience.

21. The evolving nature of cable advertising as well as the increasing relevance of competition with local

[1] James N. Dertouzos and Steevn S. Wildman, "An Empirical Study of Broadcast Competition to Cable," paper prepared for the National Cable Television Association, February 22, 1990. For example, systems operating in locations having 5 or more over-the-air signals are likely to have nearly 20 percent fewer subscribers, all other things equal.

[1] See Federal Communications Commission, Competition, Rate Regulation and the Commission's Policies Relating to the Provision of Cable Television Service, 5 F.C.C.R.4962, 1990.

broadcasters are illustrated in a statistical analysis describing the operations of a random sample of cable operators. These data were gathered by the Federal Communications Commission in support of the development of benchmarks for basic cable price regulation. From the 1992 FCC survey, information on 237 systems was analyzed, including data on total revenues, advertising sales, channel offerings (including network satellites and broadcast signals carried), subscribers, households passed, headend age, and MSO affiliation.[2]

22. Table 2 describes the distribution of advertising dollars for the complete FCC sample of cable systems as well as a subset of large MSO affiliates and large systems having more than 50,000 subscribers. For the sample total, 46 percent earned no advertising revenues in 1992. However, most of these are very small systems with limited audiences that have little appeal for advertisers. In contrast, 96% of large systems had advertising sales, generally between 1 and 5 percent of total revenues. About 88% of large systems had advertising revenues exceeding one percent, with 17% exceeding 5 percent.

23. This difference is due to the fixed cost associated with installing insertion equipment which prevented systems with fewer than 3,500 subscribers from entering the competition for advertising as of 1992. With the growth of interconnects, the acquisitions by MSO's, and reductions in the cost of required technologies, even small

[2] The data analyzed represents a subset of the FCC data, excluding several observations having obvious errors as well as the non-random portion of the sample representing systems meeting the Congressionally mandated definition of competition. That is, facing direct over-build competition or having a penetration (defined as the ratio of subscribers to households passed) of less than 30%. These were deleted because they are not representative of the industry as a whole. However, including them in the analysis had no significant qualitative effect. In fact, the increased number of observation enhanced the statistical prevision of results.

systems are rapidly developing advertising capability. The percentages of systems having less than 1% and between 1 and 5 percent were 19 and 29 respectively. Over six percent of the systems had local advertising sales that were greater than 5 percent of total revenues.

Table 2

Distribution of Advertising Revenues

	Percent of Sample, by Category		
Ad Revenue as % of Total	All Systems	Large Systems 50K plus	Large MSO affiliates
0% advertising	46%	4%	27%
less than 1%	19%	8%	15%
between 1 and 5%	29%	71%	38%
greater than 5%	6%	17%	19%

24. Results from statistical models predicting the importance of advertising revenues for the FCC sample of systems are provided in Appendix A. The first set of models, described in Table A-1, analyze the probability of a system having different levels of advertising sales (described as a percent of total revenue). The main conclusions are:

a. Advertising has increasing importance for larger systems. This reflects the fixed costs of investing in ad insertion capability as well as the higher attractiveness of a large audience base to advertisers. With the growth of interconnect arrangements, these size advantages will become less important in the future. Thus, one can anticipate rapid growth in the sales revenue of smaller systems.

b. TCI affiliates appear to have significantly higher levels of advertising revenues, all things equal. This is partially due to this MSO's clustering strategy and, in all probability, a more mature infrastructure for penetrating local advertising markets.

c. Advertising volume appears to be related to the number of active channels. This measure proxies for channel capacity, a likely indicator of more recent technologies permitting ad insertion as well as the number of channels on which spot ads can be placed.

25. The results also indicate that the dependence on advertising is significantly reduced by the presence of over-the-air signals carried by the local cable operator. This is due to the increased competition provided by strong television stations in competing for subscribers and in attracting advertisers wishing to reach audiences.[1]

26. Table 3 presents simulations based on the first model in order to demonstrate the significance of several of the key explanatory variables. The base case prediction is for an independent system that passes 15,000 homes, carries 30 active channels, and 4 over-the-air television stations. Thus, the model results indicate that 44 percent of all systems with these characteristics would be expected to have advertising sales exceeding 1% of total system revenues. Using the model estimate reported in the appendix, we can further illustrate the dependence on system size. For example, a system otherwise identical to the base case, that passed 100,000 homes (instead of 15,000) would have an 87% probability of having that much advertising. This percentage falls to 3% when only 1,000 homes are passed. For a TCI system, the

[1] In this specification, broadcast competition is measured by the natural logarithm of the number of signals carried by the operator. This measure is consistent with that used in Dertouzos and Wildman (1990). Although the correlation is not perfect, the probability of there being greater than 5 signals received over the air increases with the number of signals carried by the operator. For example, 95% of all systems carrying 13 or more signals are located in areas receiving 5 or more signals over the air. Only about 1/3 of the systems carrying fewer than four signals were located in areas receiving that many signals in the absence of cable.

probability rises to 83%, holding system size and other factors constant.

27. A system that carries 8 instead of 4 broadcast signals has only a 28% probability of having advertising sales totaling more than 1% of total revenue. In comparison with the probability for an otherwise identical (that is, the base case) system with only 4 broadcast stations, this represents a 36% decline [1] in the likelihood of having significant advertising revenues. This result is consistent with previous research on the effect of broadcasting on the ability of cable operators to attract subscribers and indicates the strong competitive effect of broadcasting on advertising sales volume.

28. These relationships are further explored in other models presented in the appendix (Table A-3). These regressions correlate total sales volume with a similar set of explanatory variables. As in the models discussed earlier, we find that larger systems have a greater volume of advertising revenue. For example, for systems selling advertising, a 10% increase in households passed results

Table 3

Illustrative Model Simulations,
Importance of Advertising by System Characteristics

Scenario:	Probability of advertising revenues greater than 1%
Base case [a]	44%
System passes 100,000 homes	87%
System passes 1,000 homes	3%
TCI affiliation	83%
System has 50 active channels	70%
System carries 8 broadcast stations	28%

[a] Base case is the prediction for an independent system that passes 15,000 homes and carries 30 active channels of which 4 are over-the-air broadcast stations.

[1] The difference between 44 and 28 (16 percentage points is 36% of 44.

in about a 13% rise in advertising sales. Again, this illustrates the importance of scale and the probable value associated with achieving such scale through marketing agreements such as interconnects. TCI affiliates are more likely to sell advertising and, when they do, have higher volumes, all things equal. A TCI affiliate is likely to earn well over 50% more advertising than an independent system of the same size and channel capacity. Again, this could well reflect the efficiency of clustering strategies in earning advertising revenues. This fact provides additional credence to the optimistic forecasts for the industry as other MSOs begin to cluster their systems. Finally, the number of broadcast channels is found to have a negative impact on the volume of sales as well as whether the system earns any ad revenue at all. On average, an increase in the number of stations carried from 4 to 5 (a 25-percent rise) is correlated with a 42 percent decline (from the first model) in the expected ad revenue earned by a representative system. For systems earning positive revenues (a situation more likely to prevail over time), the decline is less, but still significant at 15%.

29. Due to these competitive effects and their increasing importance, cable operators will have few incentives to carry the signals of competiors that will become stronger as a result of wired access to cable subscribers. By not gaining access to cable distribution, local broadcasters will suffer audience loss because the OTA signal is inferior) or may not even reach the cable subscribers). Also, in accordance with the foundations of basic economics, some cable customers will refuse to pay the additional expense and/or incur the inconvenience of installing a separate antenna and A/B switch.

30. Any decline in audience increases per unit costs, reduces the ability to invest in higher program quality (further decreasing market penetration), threatens the financial viability of affected broadcasters and harms viewers, particularly those who rely exclusively on free

over-the-air television. These costs stem from the "public good" characteristics of broadcasting products (indeed, all media products have this characteristic). That is, there are high fixed costs of developing programming content, but zero marginal costs associated with increased viewing of that content. Thus, average costs per viewer are smallest when audiences are large.

31. That local broadcasters are likely to benefit from an expanded audience due to enhanced signal reception and access to wider geographic markets is a recurring theme in the economics literature. Past work on the UHF handicap and how it is reduced via cable carriage is illustrative. The recent growth in the relative strength of independent television stations is at least partially attributable to the audience boost provided by carriage on cable.

32. To the extent that a local broadcaster, made stronger by being carried by the cable operator, diverts audiences (fewer people will subscribe to cable and a smaller percentage of cable TV viewers will watch programming capable of receiving spot insertions), there will exist an incentive to deny carriage. Since time slots on broadcast programming are not available for spot insertion by cable operators, the audience diversion will also reduce local advertising revenues.

33. Even if must carry confers competitive benefits, some might argue that these benefits come at a significant cost, namely that valuable programming will be displaced. However, the evidence based on statistical analysis of cable operator programming choices indicates that this is not going to be the case. That is, short-run displacement of cable programming is likely to be minimal. In the longer run, with the expansion of cable channel capacity the effect will be ven less significant.

34. Statistical analyses of cable programming menus reveal no correlations between the number of local over-

the-air television stations and the number of cable networks carried by the system operators. Historically, operators appear to have accommodated markets with large numbers of broadcasters by investing in higher channel capacity. Interestingly, PEG requirements (public, educational, and government channels) imposhed by local franchise authorities have had similar effects on cable operators. Thus, requirements to carry additional over-the-air signals are unlikely to displace cable network programming in large markets, especially in the long run. These results are illustrated in Table A-4. Using the FCC data set, these models correlate the number of satellite program offerings with the number of OTA channels carried.

35. This absence of a negative correlation between over-the-air signals and network programs carried by cable operators does not imply that MSOs will not have an incentive to drop broadcasters in favor of their own programming. That incentive will exist, especially for stations that are weakened by the lack of carriage. The existence of strong stations or those that are made more competitive through carriage will induce system operators to add more cable network programming in response. This interpretation is entirely consistent with the results reported in Dertouzos and Wildman (1990) that demonstrate, in estimating a more complete model of program choice, that additional program networks are carried in response to competition from over-the-air signals. So, even though cable operators will have to allocate space to broadcast channels, they will have every incentive to add cable programming, not necessarily those programs in which they have an equity interest, either by employing unused capacity or via expansion.

36. Although these results are based on a period preceding the current regime of must carry, they are quite indicative of future behavior. In the past, operators have

been willing to add (or utilize) capacity when there exists additional cable programming that is capable of generating an incremental profit (e.g., from pay per view, equity inteerst in a premium network, or local advertising). This is true even when there are channel allocations that are involuntarily imposed, such as is the case with PEG requirements made by local franchising authorities.

37. In the longer run, the explosion in channel capacity will eliminate any hardship imposed by must carry regulations.[1] For an average incremental cost that can be as low as $2.00 per subscriber per channel, operators can increase capacity to 150 channels. And, new technology developments (digital compression, etc.) will make the 500 channel system a near-term reality. The annual rate of change in average capacity is expected to triple to almost 20% according to Kagan projections. Independent surveys of cable operators confirm expansion plans.

38. Interestingly, despite the uproar over must-carry, dozens of new cable networks are being introduced. Clearly, must carry has not dampened perceived future prospects to any significant degree. For example (Stern, Christopher. "FCC: Cable's in fine state," Broadcasting & Cable, April 3, 1995), the FCC's Cable Services Bureau has released a list of more than 100 networks that it says plans to launch in the coming year.

May 24, 1995

/s/ James N. Dertouzos
JAMES N. DERTOUZOS

[1] As of 1992, about 75% of all cable systems surveyed (most of the others already had significant capacity) had plans to expand through fiber optic lines. See R. Brown, "Operators Plan Growth Along Fiber Lines," Broadcasting, v123, p. 29, February 1, 1993. For other examples, see "Queens is Channel King," Broadcasting, v121, p. 18, December 23, 1991, R. Sukow, "Zenith Claims Extra Capacity Sans Compression," Broadcasting, v122, p. 29, November 23, 1992, and L. Goldberg, "IC Opens 500-Channel Frontier to Cable Systems, Electronic Design, v42, p. 71, November 7, 1994.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS' MOTION FOR SUMMARY JUDGMENT

VOLUME 4

(EXPERT WITNESS DECLARATION)

* * * *

Dated: May 26, 1995

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF RICHARD FELDMAN

Pursuant to U.S.C. § 1746, I, Richard Feldman, declare as follows:

1. I am submitting this declaration on behalf of the Association of America's Public Television Stations ("APTS") in support of the motion for summary judgment made by defendants in the above-captioned proceeding.

2. I am retained by APTS to analyze the extent to which cable television systems dropped public television stations between 1985 and 1992, when Congress enacted the must carry requirements. My analysis, which is explained further below, showed that cable systems dropped a significant number of public television stations in the relevant period, affecting over 10 million cable subscribers, and that there is a statistically significant relationship between the number of cable subscriber drops and viewership of public stations.

Expert Qualifications

3. I am Senior Vice President and General Manager of Norman Hecht Research, Inc. ("Norman Hecht"). Norman Hecht is a research, management, and marketing services firm specializing in the provision of ratings, programming, revenue and market analysis and consulting to firms in the cable and broadcast television industries. Norman Hecht's clients have included leading television broadcast networks, network-affiliated, independent and public

television stations, cable networks, cable programming services and cable operators.

4. I hold a Master of Science degree from the Massachusetts Institute of Technology ("MIT") Sloan School of Management. I have been employed in the media research business for ten years. In my current position with Norman Hecht, I have conducted or supervised hundreds of research and consulting projects for firms in the cable and broadcast television industries. I have also consulted extensively with individual public television stations to help them to analyze and improve the profitability of their operations. In the course of my work, I have become very familiar with the operations of public television stations and with the importance of cable carriage of public television programming to viewership ratings and financial contributions.

5. Prior to joining Norman Hecht in 1990, I was employed by the National Broadcasting Company ("NBC"), as Director of New Media Research. Among my responsibilities was analysis of the financial and ratings impact of cable television on NBC and all research relating to and for NBC's cable channel, CNBC. I was also responsible for research on Olympics pay-per-view, Sports Channel America, High Definition Television, DBS, and interactive television, and I was a major participant in the Committee on Nationwide Television Audience Measurement ("CONTAM") project, which evaluated Nielsen ratings methodology.

6. Prior to joining NBC, I held a research position at the MIT Research Program on Communications Policy. In that position, I was responsible for the development of Mediacalc, an interactive forecasting system for use in the communications industry.

7. I have served as a member of the Committee on National Cable Audience Measurement, the Marketing Science Institute's Advertising Effectiveness Committee,

the Federal Communications Commission Advisory Committee on Advanced Television Services Working Party on Audience Research, the Cable Television Administration and Marketing Society and the Advertising Research Foundation Video Electronic Media Council.

Bases For Opinions

8. The opinions expressed in this Declaration are based on knowledge and experience I have gained in connection with my employment over the past ten years, including my knowledge of the operations of public television stations. My analysis is also based in particular on (i) historical public television cable carriage data maintained by Cable Data Corporation ("CDC")[1]; (ii) ratings data from A.C. Nielsen's November 1992 and November 1994 DMA Total Activity Reports; and (iii) data on the primary and secondary status of public television stations maintained by APTS. All of the CDC and APTS data upon which I have relied has been provided in electronic form to the plaintiffs in this case.

9. The CDC cable carriage figures used in my analysis were compiled by CDC from copyright filings required by law to be made by each cable system. All of the stations identified in my analysis as dropped were located within 50 miles of the cable system's headend. For the purpose of my analysis, I counted a station as dropped only if it was reported by the cable system (a) to have been carried for at least one six-month copyright reporting period, and (b) to have been dropped for at least two consecutive six-month copyright reporting periods. The fact that a station was at one time carried by a cable system indicates that the station had sufficient signal quality to be carried and, thus, to qualify for carriage under must carry rules. The criterion of two consecutive reporting periods was used to account for the possibility that a reporting period was missed through error by the cable system.

[1] The CDC data is explained at length by another witness, Tom Meek. See Meek Declaration ¶¶ 24, *et al.*

Opinions

10. My analysis supports the conclusion that a substantial number of public television stations which would appear to qualify for cable carriage under the 1992 must carry provisions are unlikely to be carried by cable systems unless carriage is mandated by law. I conducted a time series analysis of cable system drops of public television stations between 1985 and the first half of 1994, using CDC data reporting the number of subscribers in each six month copyright reporting period for cable systems that dropped public television stations. Because each cable system serves a certain number of households that subscribe to the cable system's service, each drop of a public television station by a cable system means that the public television station loses access to households served by the cable system.[2] These households are hereinafter referred to as "subscriber drops." A list of public television stations dropped by cable systems during this period and number of subscriber drops is shown in Exhibit A to this Declaration.

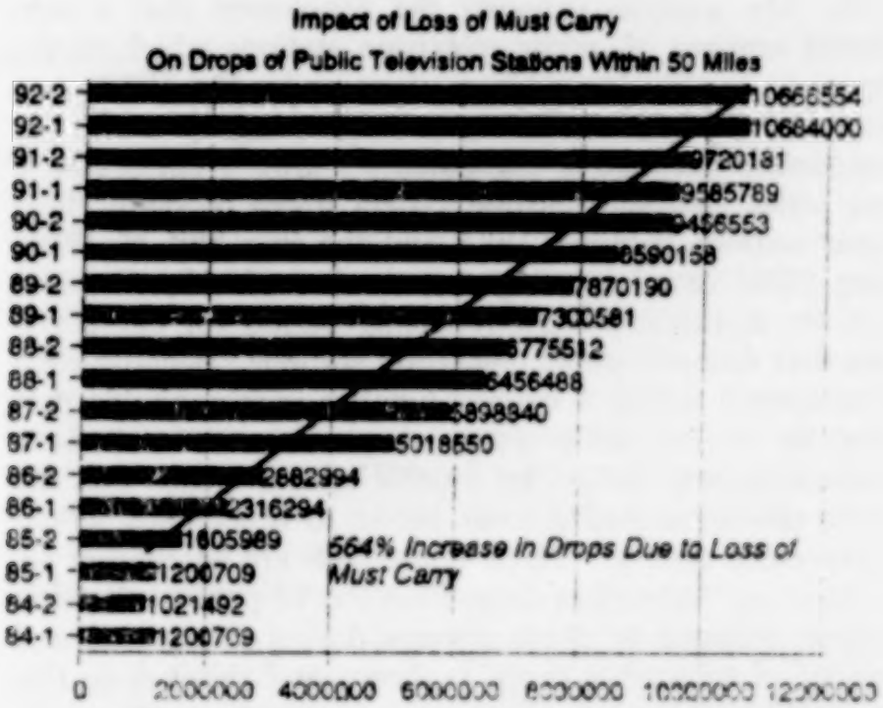
11. My analysis of the CDC drop data shows a dramatic and steadily rising increase in the number of subscriber drops following the court decision striking down the must carry regulations in 1985. The CDC data indicate that, from 1985 through the end of 1992, 314 public television stations were dropped from carriage by 1,616 cable systems.

12. The number of subscriber drops increased more than five-fold after must carry regulations were struck

[2] I understand that other witnesses have testified that most cable television subscribers either cannot or will not switch back and forth between their cable service and over-the-air reception and that, depending on the quality of the over-the-air signal at the viewer's home, the benefit of an A/B switch may be marginal.

down in 1985, from approximately 1.6 million in 1985 to over 10.6 million in 1992.

Illustration 1



13. In analyzing CDC data, I was careful to isolate those instances in which public television stations would qualify for carriage on particular cable systems pursuant to the 1992 must carry regulations. To identify local stations entitled to carriage, the data includes only stations located within 50 miles of a cable system's headend.[3] To identify stations that had a sufficient signal quality to be carried, I included in my analysis only stations that had been carried for at least one six-month reporting period prior to being dropped. I also analyzed the data to consider channel capacity restrictions. My analysis indicates

[3] This measure understates the number of local stations entitled to carriage because public television stations located further from the cable headend can also qualify as "local" if the headend is encompassed within the station's Grade B contour.

that only 1.7 percent of the more than 10.6 million subscriber drops at the end of 1992 (or 181,889 subscriber drops) involved cable systems that were already carrying the maximum number of public stations required to be carried under the 1992 must carry rules. (See Exhibit B to this Declaration.)

14. I understand that the CDC carriage data includes some data for private cable systems (known as SMATV's), which are not subject to must carry protection. Since SMATV's are estimated to account for 1 to 2 percent of all cable television subscribers, however, the failure to exclude all SMATV systems from the CDC data does not impact significantly on my conclusions. No effort was made to remove from the CDC data dropped public television stations that substantially duplicate the signal of another public television station carried on a particular cable system. I have reviewed the definition of substantial duplication in the applicable FCC rules that would disqualify a public television station from entitlement to carriage.[4] In my opinion, based on my familiarity with public television stations and television markets, very few public television stations that are local to the same cable system substantially duplicate programming, as defined by the FCC. Therefore, in my opinion, the reported subscriber drops closely reflect drops of public television stations that would qualify for carriage under the 1992 must carry rules.

15. The subscriber drop trend began to reverse itself after the reimposition of must carry obligations at the end of 1992. By one year after must carry obligations were

[4] One station is deemed "to substantially duplicate" the programming of another station if it broadcasts the same programming simultaneously or non-simultaneously, for more than 50 percent of prime time and more than 50 percent outside of prime time over a three-month period. 47 C.F.R. § 76.56(a)(1).

reinstated (December 1992 for public television stations), the number of subscriber drops had decreased by about one-third. Affected public television stations gained access to an additional 3.2 million subscribers.

* * * *

May 24, 1995

/s/ Richard Feldman
RICHARD FELDMAN

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DISCOVERY COMMUNICATIONS, INC.
STATEMENT OF MATERIAL FACTS NOT IN DISPUTE

* * * *

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF WILLIAM GOODWYN

I, William Goodwyn, declare on the basis of my own personal knowledge as follows:

1. I am Senior Vice President of Discovery Communications, Inc. ("DCI"). I submit this affidavit in support of plaintiffs' motion for summary judgment in this case.

2. I am responsible for affiliate sales and affiliate relations for DCI's cable programming networks, The Discovery Channel ("Discovery") and The Learning Channel ("TLC"). In this capacity, I supervise DCI's relations with, and sales of DCI's programming to, cable systems throughout the United States. My responsibilities include marketing, promotion, and distribution of Discovery and TLC to cable operators. I am also responsible for negotiating the terms of license agreements—often called "affiliation agreements" or "carriage agreements"—whereby cable operators compensate DCI for the right to carry its programming.

3. Discovery was founded in 1985 and is now a well-established cable network with more than 63 million subscribers. In a November 1994 survey of cable subscribers conducted by Beta Research Corporation, Discovery ranked first among all basic cable networks in terms of perceived value and importance to viewers. *See* Exhibit 1 (attached).

4. DCI acquired TLC for $31.5 million in early 1991 as a complementary service to Discovery. DCI improved

TLC's programming and relaunched it in October 1991. Since acquiring TLC, DCI has invested more than $40 million in additional funds to revamp and upgrade TLC's programming.

* * * *

7. TLC's programming is highly valued by viewers. In a November 1994 survey of cable subscribers conducted by Beta Research Corporation, TLC ranked first among mid-sized cable networks in terms of perceived value and importance to viewers. *See* Exhibit 1 (attached). Similarly, in a December 1994 survey of cable operator executives conducted by Myers Communications, Inc., TLC ranked first among emerging cable networks in terms of the overall appeal of its programming to subscribers. *See* Exhibit 1 (attached).

8. TLC incurred operating losses in 1991, 1992, 1993, and 1994. As of March 1, 1995, TLC was carried on about 20% of U.S. cable systems and had about 32.4 million paying subscribers. As a start-up network, TLC usually competes for one of the last available channels on a cable operator's system. In order to achieve financial viability, it is essential that TLC increase its subscribership by obtaining carriage on additional cable systems.

* * * *

12. On the basis of communications that my staff and I have had with cable operators since October 1992, I believe that the must-carry provisions of the 1992 Cable Act have harmed TLC, and to a lesser extent Discovery, in a variety of ways. TLC has experienced harmful effects on at least 31 cable systems as a direct result of the must-carry law. These 31 cable systems are systems that, as a direct result of the must-carry law: (a) have been unable to launch TLC; (b) have been forced to drop TLC; (c) have been unable to extend TLC full time carriage from current part-time carriage; (d) have been forced to demote TLC from full-time to part-time carriage; or (e) have been forced to delay launching

TLC for significant periods of time. Personnel employed by these 31 cable systems have informed DCI that each system had no available channel capacity at the relevant time, and that these adverse actions were necessitated by the Cable Act's must-carry requirements. A list of the 31 cable systems, and a summary of the information that their personnel have supplied to DCI, appears in Exhibit 3 (attached).

13. I believe that two distinct measures may appropriately by used to quantify the adverse economic impact of the cable system actions described above. The first measure concerns diminished asset value. A cable programming service is typically valued—for example, in purchase and sale transactions—based largely on the number of its paying subscribers. I believe that the market would impute to TLC an asset value of at least $3.00 per subscriber. I regard this as a very conservative estimate, based on recent purchase transactions involving cable programming services comparable to TLC.

14. The second measure of adverse economic impact concerns lost revenue or income. A cable programming service like TLC receives two distinct income streams: license fees and advertising revenues. In view of its current rate card and advertising base, TLC can be expected to earn combined license fees and advertising revenues of roughly $0.10 per subscriber per month, or $1.20 per subscriber per year.

15. The number of subscribers that TLC has lost, or failed to secure, because of the must-carry law is approximately equal to the number of subscribers on the 31 affected cable systems (or, where TLC has failed to obtain carriage only on certain headends of a cable system, the number of subscribers on those affected headends). This assumes that TLC would be carried on the basic or expanded basic tier, thus ensuring access to roughly 98% of the subscribers on each system. More than 95% of TLC's existing subscribers view it on the basic or expanded basic tier.

16. Because of the Cable Act's must-carry requirements, TLC has lost, or failed to secure, approximately 840,000 subscribers on 17 cable systems that have (a) dropped its programming or (b) been unable to launch its programming. In terms of diminished asset value, the harm caused by this loss of subscribers is approximately $2,500,000. In terms of forgone revenue, the harm caused by this loss of subscribers is approximately $1,000,000 per year.

17. Because of the Cable Act's must-carry requirements, TLC's programming is viewed part-time rather than full-time by approximately 500,000 subscribers on 5 cable systems that have (a) been unable to promote TLC from part-time to full-time carriage or (b) been forced to demote TLC from full-time to part-time carriage. In such instances, TLC generally suffers no diminution of license fees, but it does suffer a reduction in advertising revenues. In terms of forgone advertising revenue, the harm caused by such enforced part-time carriage ranges between $100,000 and $200,000 per year.

18. Because of the Cable Act's must-carry requirements, TLC lost or failed to secure an additional 460,000 subscribers for up to two years on 9 cable systems that were forced to delay launching TLC. In terms of forgone revenue, the harm caused by this loss of subscribers is approximately $550,000 per year.

19. In estimating the revenue losses described above, I have not attempted to allocate lost revenue to particular accounting periods for the purpose of computing year-by-year changes in net income. In order to make carriage of TLC more attractive to cable operators, DCI currently offers incentives to carriage, including a one-year waiver of license fees and a lump-sum cash payment (called "launch support") for the operator's use in promoting TLC. The existence of these incentives does not affect the ultimate revenue loss suffered by TLC as a result of the must-carry law, but it does affect the calendar year

in which such losses are experienced. For example, if the must-carry law forced a cable system to delay TLC's launch date from 1/1/93 to 1/1/95, TLC would suffer loss of two years' revenue, although this loss would be realized in 1994-95 rather than 1993-94. Similarly, TLC's payment of launch support would be deferred and thus reduce net income in 1995 rather than in 1993.

* * * *

May 24, 1995

/s/ William Goodwyn
WILLIAM GOODWYN

[EXHIBIT 3]

CABLE SYSTEMS ON WHICH TLC HAS EXPERIENCED HARM AS A DIRECT RESULT OF THE MUST-CARRY LAW

A. *Systems on which TLC was not launched because of must-carry*:

1. Cablevision of Greensboro, Greensboro NC
   50,000 subscribers
   Contact person: Patty Lumpkin, VP Marketing.
   According to Ms. Lumpkin, TLC cannot be carried on Cablevision's Greensboro system because there are no open channels. If the must-carry law were overturned, channels would be opened up and TLC would be launched. The Greensboro system is now rebuilding and TLC hopes to be rolled out later this year.

2. Colony, Lomita CA
   20,400 subscribers
   Contact person: Randy Hicks, Marketing Manager.
   According to Mr. Hicks, Colony's Lomita system "would definitely put TLC on" if the must-carry law were overturned.

3. Colony, Hialeah FL
   68,000 subscribers
   Contact person: Al Perez de la Mesa, Marketing Manager.
   According to Mr. Perez de la Mesa, Colony's Hialeah System has 14 must-carrys; Colony would drop some of them if the must-carry law were overturned; and TLC would be launched in that event.

4. Comcast, Sarasota/Venice FL
108,000 subscribers
Contact person: Jerry Norris, Marketing Manager.
According to Mr. Norris, Comcast's Sarasota/Venice system has been forced to add several must-carrys and will drop at least one if the must-carry law is overturned. Mr. Norris stated that TLC would be launched in that event. The Sarasota/Venice system is now rebuilding and TLC hopes to be rolled out later this year.

5. Continental, Pompano Beach FL
128,000 subscribers
Contact person: Larry Hoepfner, VP Marketing.
According to Mr. Hoepfner, Continental's Pompano Beach system has 14 must-carrys and would drop some of them if the law were overturned. This would "ensure the launch of TLC."

6. Falcon Video Communications, Inc.,
Nags Head NC
16,000 subscribers
Contact person: Larry Ott, General Manager.
According to Mr. Ott, Falcon's Nags Head system has been forced to add several must-carrys, and it would be able to add TLC if the law were overturned. The Nag's Head system is now rebuilding and TLC hopes to be rolled out later this year.

7. Harron, Waxahatchie TX
26,000 subscribers
Contact person: Al Baker, Asst. to General Manager.
According to Mr. Baker, Harron's Waxahatchie system was forced by the must-carry law to add 15 off-air stations. The system would launch TLC if the law were overturned.

8. Kingwood Cablevision (Independent),
Kingwood TX
15,000 subscribers
Contact person: Charlie Garland, General Manager.
According to Mr. Garland, the Kingwood system has a total of 35 channels, five of which are occupied by must-carry stations (including two Hispanic stations). He said that if the must-carry law were overturned, he would have been able to carry TLC by now.

9. Intermedia, Mt. View CA
13,565 subscribers
Contact person: Cindy Weintraub, Marketing Director.
According to Ms. Weintraub, TLC would be carried if the must-carry law were overturned.

10. Metrovision, Livonia MI
26,730 subscribers
Contact person: Tom Bjorklund, Regional Manager.
According to Mr. Bjorklund, this system (which is currently rebuilding) had no available channel capacity during the past few years because it was required to carry so many must-carry stations. If the must-carry law were overturned, TLC would have been launched.

11. Metrovision, Redford MI
13,035 subscribers
Contact person: Tom Bjorklund, Regional Manager.
According to Mr. Bjorklund, this system (which is currently rebuilding) had no available channel capacity during the past few years because it was required to carry so many must-carry stations. If the must-carry law were overturned, TLC would have been launched.

12. Metrovision, Farmington Hills MI
33,393 subscribers
Contact person: Tom Bjorklund, Regional Manager.
According to Mr. Bjorklund, this system (which is currently rebuilding) had no available channel capacity during the past few years because it was required to carry so many must-carry stations. If the must-carry law were overturned, TLC would have been launched.

13. Paragon, Mt. Vernon NY
11,226 subscribers
Contact person: Elaine Jones, VP Marketing.
According to Ms. Jones, TLC was not launched and is not now being carried due to restraints imposed by the must-carry law. If the law were overturned, TLC would be added to the system.

14. Time-Warner, Orlando FL
205,056 subscribers
Contact person: Jim Rozier
According to Mr. Rozier, Time-Warner's Orlando system has no available channels, wishes to carry TLC, and would now carry TLC throughout the system were it not for must-carry requirements. TLC is currently being carried on certain portions of the Orlando system that have been rebuilt. However, TLC has been unable to obtain carriage on the bulk of the system's head-ends, resulting in a loss of 205,056 subscribers.

15. TeleCable, Arlington TX
60,000 subscribers
Contact persons: Pat Mellon, TeleCable Corporate; Lydia Hall, Area Marketing Manager.
According to Mr. Mellon, TeleCable's Arlington system was required to add 15 must-carry

stations when the law first went into effect, and it would otherwise have added TLC at that time. According to Ms. Hall, TeleCable's Arlington system is now "completely full," and there is a very good possibility that TLC will be added if the law is overturned.

16. TeleCable, Margate FL
25,000 subscribers
Contact person: Tony Genova, General Manager.
According to Mr. Genova, the must-carry law forced TeleCable's Margate system to add 18 off-air stations, at least three of which would be dropped if the law were overturned. Mr. Genova stated that TLC is "first on his list for additions" and that TLC would definitely be launched if the statute were struck down.

B. *Systems on which TLC was dropped because of must-carry*:

17. Cablevision Industries, Winter Garden FL
6,840 subscribers
Contact person: Mike Egan
TLC was dropped in 1994 from one head-end of the Winter Garden system and thus lost 6,840 subscribers who previously received TLC. According to Mr. Egan, TLC was dropped because of requirements imposed by the must-cary law. (TLC is still being carried on another head-end of the Winter Garden system, on which it has 7,074 subscribers.)

C. *Systems on which TLC was not extended full-time carriage from current part-time carriage because of must-carry*:

18. Cablevision Systems, Norwalk CT

19. Cablevision Systems, Bridgeport CT
200,000 subscribers
Contact person: Donna Garrafono, Director of Public Relations.
According to Ms. Garrafono, neither of these systems is able to launch TLC on a full-time basis because of requirements imposed by the must-carry law. If the law were overturned, both systems would carry TLC full-time.

20. Lenfest, Oakland CA
70,400 subscribers
Contact person: Clay Owens, General Manager.
According to Mr. Owens, TLC would be moved from part-time to full-time status if the must-carry law were overturned.

21. Summit Cable, Winston-Salem NC
81,000 subscribers
Contact person: Jackie Johnson, Marketing Manager.
According to Ms. Johnson, the must-carry law forced Summit's Winston-Salem system to add three off-air religious stations. If the law were overturned, the system would drop two of these stations and move TLC from part-time to full-time carriage. Ms. Johnson stated that this would be the only way in which TLC could secure full-time carriage during 1995.

D. *Systems on which TLC was dropped from full-time to part-time carriage because of must-carry*:

22. TKR Tri-System Cable, Piscataway NJ
146,660 subscribers
Contact person: Charlie Bartolotta, General Manager.
According to Mr. Bartolotta, TLC was dropped from full-time to part-time carriage because of requirements imposed by the must-carry law.

He said that his system has no open channels and must still pick up four more must-carrys as of today. If the must-carry law were overturned, TLC would be placed back on full-time carriage.

E. *Systems on which TLC's launch date was significantly delayed because of must-carry*:

23. Comcast, New Haven CT
68,531 subscribers
Contact person: Chip Goodman, General Manager.
TLC's launch on this system was delayed to 3/1/95. According to Mr. Goodman, this launch delay was attributable to must-carry requirements.

24. Comcast, Willow Grove, PA
34,900 subscribers
Contact person: Mike Adderly, General Manager.
TLC's launch on this system was delayed to 12/29/94. According to Mr. Adderly, this launch delay was attributable to must-carry requirements.

25. New England Cablevision, Rochester ME
15,000 subscribers
Contact person: Claire Drapeau, General Manager.
TLC has not yet been launched on this system, but expects to be launched 4/1/95. According to Ms. Drapeau, this launch delay was attributable to must-carry requirements.

26. Paragon, Watertown NY
13,448 subscribers
Contact person: Elaine Jones, VP Marketing.
TLC's launch on this system was delayed to

2/1/95. According to Ms. Jones, this launch delay was attributable to must-carry requirements.

27. Sammons, Dover NJ
103,752 subscribers
Contact person: Alan Goldenberg, General Manager.
TLC has not yet been launched on this system, but expects to be launched in Spring 1995. According to Mr. Goldenberg, this launch delay was attributable to must-carry requirements.

28. Sammons, Ft. Worth TX
102,943 subscribers
Contact person: Tom Soulsby, General Manager.
TLC's launch on this system was delayed to 12/31/94. According to Mr. Soulsby, this launch delay was attributable to must-carry requirements.

29. Sammons, Denton TX
20,719 subscribers
Contact person: John Enloc, General Manager.
TLC's launch on this system was delayed to 12/31/94. According to Mr. Enloc, this launch delay was attributable to must-carry requirements.

30. TCI, Andover MA
22,540 subscribers
Contact person: Bob Carr, General Manager.
TLC's launch on this system was delayed to 12/31/94. According to Mr. Carr, this launch delay was attributable to must-carry requirements.

31. TCI, Grand Rapids MI
68,328 subscribers
Contact person: Don Stephan, General Manager.
TLC's launch on this system was delayed to 12/30/94. According to Mr. Stephan, this launch delay was attributable to must-carry requirements.

FOR THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DEFENDANTS' JOINT SUBMISSION OF EXPERT AFFIDAVITS AND REPORTS IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

VOLUME II.B

* * * *

Dated: May 26, 1995

* * * *

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF ROGER G. NOLL

I, Roger G. Noll, depose and say as follows:

1. I am the Morris M. Doyle Professor of Public Policy in the Department of Economics at Stanford University. I received a Ph.D. in economics from Harvard University, and a B.S. in mathematics from the California Institute of Technology. My primary field in economics is industrial organization and regulation, with an emphasis on communications policy. I teach the economics of antitrust and regulation at the graduate level, and economics policy analysis to undergraduates. At Stanford , I am also Director of the Public Policy Program, an interdepartmental undergraduate major, and a Professor by Courtesy in the Department of Political Science and the Graduate School of Business.

2. During my thirty years in academics, I have published seven books and substantially more than 100 articles, all of which are listed on my curriculum vita, which is attached as an appendix to this report. Among these publications are several that deal with the economics of the broadcasting and cable industries, including *Economic Aspects of Television Regulation*, which in 1975 won the annual book award of the National Association of Educational Broadcasters as the most significant publication on communications policy issues.

3. I have consulted for many government agencies and private entities during my career. I served as a senior staff economist at the President's Council of Economic Advisers in 1967-69, during which time I was an alternate member of the President's Task Force on Communications Policy and a member of the Interagency Task

Force on Public Broadcasting that proposed establishing the Corporation for Public Broadcasting. I served as a consultant to the Antitrust Division of the U.S. Department of Justice in the 1970s, assisting the department in formulating its case in *U.S. v. AT&T*. I also served as a consultant to the FCC during the late 1970s in connection with its investigations of cable television deregulation and network television. Presently I am a consultant to the Antitrust Division on issues arising in connection with the settlement agreement that ended the government's antitrust case against AT&T (the so-called *Modification of Finali Judgement*). I also consulted for the National Association of Attorneys General on their antitrust complaint against Primestar Partners, dealing with the relationships among major cable system operators, their joint venture in direct broadcast satellites, and their affiliated cable program networks.

4. I have been retained by the U.S. Department of Justice to undertake an economic analysis of the "must carry" provisions of the cable regulaitons adopted by Congress in the Cable Television Consumer Protection and Competition Act of 1992. Specifically, my assignment is to examine the economics of the cable, cable programming, and over-the-air broadcasting industry to ascertain the likely effects of the elimination of must carry on the structure and performance of the cable and broadcast industries, and on viewers and advertisers. One purpose of my task has been to provide a general conceptual overview of the issues raised in this case, based upon research about the economics of video media, for the purpose of providing a broad context for other, more narrowly focused expert reports. In carrying out this assignment, I have examined numerous discovery documents, the legislative history of the Cable Television Consumer Protection and Competition Act of 1992, documents submitted in the FCC's proceedings about implemeting the 1992 Act, the FCC's *First Report* on implementation, and the preliminary reports of the other experts. In addition, I have relied upon my general knowledge of the industry, derived from studying it for nearly 30 years.

5. This report sets for the my conclusions and the basis for them. To summarize, my overall conclusions are (1) that eliminating the must-carry provision of the existing system of cable regulations is likely to cause a substantial number of commercial and noncommercial stations to be dropped from basic cable service, (2) that these stations will suffer significant financial harm and will either leave the air or substantially curtail the amount and quality of programming that they offer, (3) that viewers who do not subsribe to cable television will be harmed by a degradation in service, and (4) that local and national spot market advertisers may be harmed by the resulting increase in concentration in television advertising. Moreover, these conclusions are supported by testimony and other material submitted to Congress in its deliberations concerning the 1992 Act, as well as most of the scholarly research that was published or otherwise publicly distributed prior to the passage of the Act.

6. This report deals with each of the relevant groups in the industry: cable systems and cable programming networks; over-the-air broadcasters (especially independent and noncommercial stations); and viewers and advertisers. It documents precisely why cable systems have an incentive to undercut local television stations, and why, in the process, this does harm to local viewers as well as to advertisers and local television stations.

The Economics of Cable

7. The cornerstone of an analysis of must-carry is the structure of the cable television industry. More than 90 percent of households are passed by cable, and about 60 percent subscribe to cable service. For the vast majority of households, the local cable television company has no reasonable substitutes in price and quality for the delivery of multichannel video programming services. Last fall, the Federal Communications Commission (FCC) pro-

vided extensive evidence in support of its conclusion that local cable television franchises have substantial market power, and that over-the-air broadcasting and a variety of new distribution technologies have not succeeded in eroding this market power.[1]

8. Cable television systems operate in three distinct product markets that are relevant to this litigation: subscribers, programming, and advertising.

9. First, cable systems sell service in a local market[2] that is determined by their franchise agreements with local government. In a small number of communities, some "overbuild" has given consumers the opportunity to select between two cable franchisees, but these situations account for a tiny fraction of the nation.[3] For the past two years viewers have also been able to obtain multichannel video systems through home satellite dishes, but this technology has not yet achieved sufficiently low prices and high quality to pose a threat to cable. In a few areas, terrestrial multipoint distribution systems have also

[1] Fderl Communcaion Commission, *First Report: Implementation of Section 19 of Cable Television Consumer Protection Act of 1992*, September 19, 1994, (Def. Exh. 280) p. 69, 98-101, Appendix I. One measure of the market power of cable is its extremely high profitability, as measured by estimates of Tobin's q (the ratio of market value to capital investment) for cable systems. Another measure is the effect on cable pricing of "overbuild"—that is, the rare circumstances where two cable systems overlap and compete for customers. In overbuild areas, basic cable service prices tend to be substantially lower. For a summary of some of the relevant data, see the committee report on the Cable Television Consumer Protection and Competition Act of 1992: *Report (HR4850)*, House Committee on Energy and Commerce, 102nd Congress, 2d Sess. (Report 102-628), (CR Exh. 4), p. 30-31.

[2] The 1992 legislation stipulates that the state of competition for cable be assessed on the basis of local markets, and the FCC's *First Report* concludes that, most likely, this is the appropriate relevant market for competitive analysis (p. 24).

[3] The most comprehensive study of overbuild is Thomas W. Hazlett, "Duopolistic Competition in Cable Television: Implications for Public Policy," *Yale Journal on Regulation* 7 (1990), p. 65-119.

entered to provide video services, but these, too, have not been particularly successful in competing with cable. Cable still serves over ninety percent of the households that subscribe to any multichannel video distribution technology, and most of those who do not subscribe to cable are owners of satellite home receivers whose home is not passed by cable.[4] Hence, cable retains, and will continue to retain for at least the next several years, considerable market power over its subscribers.

10. Several recent studies have found that cable systems possess and exercise considerable market power.[5] Rubinowitz examined basic service price changes from 1984 to 1990, and concluded that 43 percent of the real price increase during this period arose from the greater ability of cable systems to exercise market power after the Cable Communications Policy Act of 1984, which deregulated cable television. Of course, these data pertain to a period before new technologies were introduced, but their limited incursion into the market indicates that these results still apply. These findings fit well with the earlier results of Mayo and Otsuka, who found that regulated cable systems, especially in smaller markets, set prices below the monopoly profit-maximizing levels.

11. Three studies have examined the reactions of the value of cable companies to cable deregulation. Carroll

[4] See FCC, *First Report*, p. 7.

[5] Robert N. Rubinovitz, "Market Power and Price Increases for Basic Cable Service Since Deregulation," *Rand Journal of Economics* 24 (1993), p. 1-18; John W. Mayo and Yasuji Otsuka, "Demand, Pricing, and Regulation: Evidence for the Cable Television Industry," *Rand Journal of Economics* 22 (1991), p. 396-410; and A. B. Jaffe and D. M. Kanter," *Rand Journal of Economics* 21 (1990), p. 226-234; Kathleen A. Carroll and Douglas J. Lamdin, "Measuring Market Responses to Regulation of the Cable TV Industry," *Journal of Regulatory Economics* 5 (1993), p. 385-99; Robin A. Prager, "The Effects of Deregulating Cable Television: Evidence from the Financial Markets," *Journal of Regulatory Economics* 4 (1992), p. 347-63. In addition, Hazlett, *op. cit.*, finds that basic service prices are lower in overbuild (duopoly) markets.

and Lamdin, and Prager, both found that cable deregulation increased the prices of stock in cable companies. Jaffe and Kanter found that prices paid to acquire cable systems increased substantially after the act, with the effect concentrated outside the top 100 markets. These effects took place in a market in which systems were already selling for much more than their replacement costs (that is, already had high values of Tobin's q). Rubinovitz found no similar distinction between large and small markets, and observed that a plausible hypothesis is that transactions of largest systems in big cities had fully anticipated cable deregulation when the act was passed.

12. These studies illustrate two important points. First, economics research strongly supports the conclusion of Congress and the FCC that cable enjoys considerable market power in the distribution of multichannel video entertainment. Second, in the past regulatory policy did reduce the degree to which cable systems harmed consumers by exercising this market power.

13. The second market in which cable systems operate is the national market for the acquisition of programming, in which local television stations, distant television stations, distant television stations, and national cable programming networks all seek carriage on the system. All of these sources of programs seek access to viewers who subscribe to the local cable service, and have no alternnative access to the majority of viewers in any given locality other than through the cable system. In the case of local television stations that are not carried on the local cable system, some cable customers—those not suffering from localized repection problems—could gain access to dropped stations by installing an antenna and using an "A/B" switch on the cable connector. As a practical matter, however, this rarely happens.[6] Likewise,

[6] For example, when a dispute over retransmission consent caused a TCI cable system in Corpus Christi, Texas, to drop all three primary networks, only approximately 54 percent of subscribers acquired an A/B switch, and of these approximately two-thirds thought that the A/B switch was too inconvenient and 85 percent stopped using it after the networks returned (Def. Exh. 291). The expert declaration of Jeffrey Rohlfs confirms that this phenomenon is general, by finding that when local stations are dropped by cable systems, all measures of their audience shares among cable households fall dramatically. For further discussion of why the A/B switch is an unsatisfactory alternative to must-carry requirements, see the expert declaration of Eldon J. Haakinson. The committee reports dealing with the Cable Television and Consumer Protection Act of 1992 reach the same conclusion. See *Report (HR4850)*, House Committee on Energy and Commerce, 102nd Congress, 2nd Session (Report 102-628), p. 50, 54; and *Report (S12)*, Senate Committee on Commerce, Science, and Transportation, 102nd Congress, 1st Session (Report 102-92) (CR Exh. 3), p. 45.

viewers could gain access to cable networks that are not carried by the local system by subscribing to service from a direct broadcast satellite or another new technology, but these alternatives either are more expensive or offer generally less desirable service. Hence, each cable system benefits from extensive competition for access to its cus-
benefits from extensive competition for access to its customers, and enjoys market power over these sources because it is the only means of access to its customers. How this market power affects cable operations and the welfare of consumers is analyzed in subsequent sections of this report that deal with vertical integration in the industry.

14. Third, cable systems compete in a national market for advertising on television. Until recently, virtually all television advertising was sold by programmers—national broadcast television and cable program networks and local television stations. More recently, some cable systems have aggressively marketed advertising themselves, inserting ads in cable network programming that is offered on their systems. For the industry as a whole, *annual* revenues per subscriber from local advertising on cable systems were a little less than the average *monthly* charge for basic subscription in 1993, but had grown by 19

percent between 1992 and 1993.[7] Since 1985, advertising sales by cable systems have increased six fold, and are expected to double again by the year 2000.[8] Although advertising sold by both cable networks and cable systems still accounts for only a few percent of total television advertising, its rapid growth and potential for still further growth creates an important incentive for cable systems to drop over-the-air broadcast channels in the absence of must-carry requirements, as is discussed at greater length elsewhere in this report.

15. The behavior of the cable industry in all three relevant markets is affected by the extensive vertical integration of cable systems into cable programming networks. Vertical integration allows cable system owners to operate simultaneously in all three markets: sales to customers, sales to advertisers, and program distribution to themselves and other cable systems. The largest system owner, Telecommunications, Inc. has ownership interests in 23 national programming networks, and in eight of the twenty most popular services; other system owners own most of the rest; and many of the cable networks are joint

[7] A few major system operators have done substantially better than others, indicating that the rest of the industry has considerable potential for expanding this source of revenues. For example, an industry survey found that KBLCOM captured $46.79 per subscriber in ads during 1993, and Viacom collected $35.91, compared to an estimated $18.25 for the industry as a whole (*AdTrak Survey Results: Final Report Prepared for Cableteleviison Advertising Bureau*, Data Design, October 1994) (Def. Exh. 252). These figures indicate that on some systems advertising sales generate revenues of fifteen percent or more of basic monthly subscriber fees. The Adelphia Cable Communications report to its stockholders stated that advertising had become its largest source of revenues other than charges to subscribers (Def. Exh. 226).

[8] See, for example, the documents from the 1994 national sales meeting of Comcast Cable Advertising, (Def. Exh. 224) and the issues of *Cable TV Advertising* of June 15, 1994, August 18, 1994, and October 26, 1994 (Def. Exhs. 242,244,246). Similar numbers are cited in the Senate *Report, op. cit.*, p. 44 (CR Exh. 3).

ventures among cable system owners.[9] Thus, although the cable programming industry has a very large number of participants, it is faor less competitive than one would infer from simply counting the number of channels.

16. The most important effect of vertical integration in the cable industry is that it affects the incentives of cable systems in deciding which programming to carry. The basic argument is an application of the "Steiner model" of program choice by a monopolist.[10] Steiner examines the difference in programming decisions between a competitive broadcast distribution industry and a monopoly. Steiner concludes that monopolists offer fewer programming options because, in calculating profitability of adding a channuel, they count only the revenues derived from an increase in total viewing that the new program option induced, whereas a competitive supplier would also count revenues derived from viewers who switched from other options.[11]

[9] FCC, *First Report*, Appendix G.

[10] Every book on the economics of television explicates some version of the theory of program choice first proposed by Peter O. Steiner, "Program Patterns and Preferences, and the Workability of Competition in Radio Broadcasting," *Quarterly Journal of Economics* 66 (1952). See, for example, Roger G. Noll, Merton J. Peck, and John J. McGowan, *Economic Aspects of Television Regulation*, 1974, and Bruce Owen and Steven Wildman, *Video Economics*, 1992.

[11] Steiner's model can be illustrated by a simple example. Assume that all revenues come from advertising, and that a market contains nine channels, each of which has an audience of six percent of the households, i.e., on average 54 percent (nine times six) of all households are watching television at any moment. Also assume that a channel needs an audience rating of five percent to generate enough advertising revenues to cover all of its costs, so that in firm enters and captures an audience equal to six percent as well, this case all nine channels are profitable. Now assume that a tenth but that not all of this is an increment to total viewing. Instead, assume that three percentage points of this rating correspond to viewers who would otherwise not watch TV, while the other three

17. Steiner's logic is easily extended to the case of a monopolist in the delivery of programs who is vertically integrated with some but not all sources of programs.[12] A vertically integrated firm will expand channel capacity and add affiliated cable networks until its total revenue from the last affiliated channel (including its affiliated network's net revenues from advertising) equals the marginal cost of expanding capacity (ignoring the carriage fee, which, because it is paid to the affiliated cable network, is simply an internal transfer within the firm). The unaffiliated cable system, or the affiliated system contemplating the addition of an unaffiliated cable network, will ignore advertising revenues earned by the unaffiliated network and will count its payments to the unaffiliated network for carriage as a cost. Because the second type of decision ignores one source of revenues (network advertising) and the first type of decision ignores carriage fees, the perceived profitability of an additional cable network will be higher in the first (affiliated) case than the second. For large, vertically integrated major system operators, the latter effect can be partially overcome at the cor-

---

percentage points are captured from other channels. The tenth channel obtains total advertising revenues determined by its rating of six percent of all households, and it will be financially viable because this revenue covers its costs. But if all channels have the same owner (a monopoly supplier of television entertainment), the incremental cost of the new channel (equal to advertising revenues for five percent of households) will exceed the incremental revenue (equal to the advertising revenues from the net increase in viewing of three percent of all households), so that the monopolist would not add the tenth channel. Steiner concludes that this behavior is socially desirable, but only because he assigns zero value to the preference of the viewers who switch. A great deal of theoretical work in the 1970s extended Steiner's basic approach to cases in which the added value of new channels to views who switch is taken into account.

[12] The studies of vertical integration in broadcasting, including those dealing with cable television that are cited in the next few paragraphs, apply some version of this model.

porate level by tacit agreements to carry some of each other's networks, so that vertically integrated systems might carry more cable networks than unintegrated ones. A vertically integrated system will be especially likely to exhibilt more cooperaitve behavior than unintegrated systems in deciding whether to carry cable networks that are owned by another vertically integrated company and that are not close substitutes for (i.e., competitors to) its own.

18. Several research projects have documented that, indeed, cable systems tend to favor their own affiliates in deciding which channels to carry.[13] Klein, a cable industry consultant, examined pay networks and the most popular basic cable networks, and found that cable systems were more likely to carry their own networks, although he emphasized his other finding that vertically integrated cable systems carry a greater number and variety of cable networks.[14] Both findings are consistent with the Steiner model.

19. Salinger [15] performed an analysis similar to Klein's, but focused on the major pay-per-channel services (HBO and Cinemax from Time-Warner, Showtime and The

---

[13] In addition, network-owned affiliates have been found to carry more network programs than independent affiliates. See Steven S. Wildman, "Vertical Integration in Broadcasting: A Study of Network Owned and Operated TV Stations," Studies in Industrial Economics, Stanford University, 1978.

[14] Benjamin Klein, "The Competitive Consequences of Vertical Integration in the Cable Industry," Department of Economics, University of California, Los Angeles, June 1989 (Def. Exh. 416). Klein believes that the second finding offsets the first, and so concludes that vertical integration by major system operators is beneficial to consumers. This conclusion is unwarranted because it does not deal with several other issues pertaining to vertical integration, including most of the issues discussed in this report.

[15] Michael Salinger, "A Test of Successive Monopoly and Foreclosure Effects: Vertical Integration between Cable Systems and Pay Services," Columbia University, 1988 (CR Exh. 28).

Movie Channel from Viacom). He found that cable systems owned by Time-Warner and Viacom were more likely to carry their affiliated pair of pay-cable channels. Waterman and Weiss, using more elaborate statistical techniques, reached stronger conclusions, finding that vertically integrated cable systems not only favored their pay-cable affiliates, but that one, ATC, carried fewer pay-cable services than unaffiliated systems. They also concluded that, while the overall economic welfare effects of vertical integration involve other issues that they do not consider and so are not resolved by their research, vertical integration does raise a First Amendment concern: favoritism for vertically-related program affiliates limits both freedom of expression by nonintegrated sources of programs and variety of messages available to consumers.

20. Chipty [17] undertook the ambitious task of considering choices among all types of cable networks, and produced broadly similar findings. She concluded that integrated cable systems select channels to enhance the value of

[16] David Waterman and Andrew Weiss, "The Effects of Vertical Integration of Cable Systems with Pay Cable Networks," Department of Economics, University of Southern California, February 1990 (Def. Exh. 417). This paper has been revised and strengthened, and is now available as "The Effects of Vertical Integration between Cable Television Systems and Pay Cable Networks," Department of Economics, University of Southern California, March 1993.

[17] Tasneem Chipty, "Vertical Integration and Its Effects on Unintegrated Rivals: Evidence for the Cable Television Industry," Department of Economics, Ohio State University, September 1993 (Def. Exh. 418). Chipty's conceptual model relies on the transactions costs analysis, and so she interprets her results as demonstrating certain economies of vertical integration. But the fact that favoring vertical affiliates is profit-enhancing does not mean that vertical integration is necessarily socially desirable, and her results are also consistent with the view that a bias in favor of affiliates is a distortion created by perverse financial incentives to favor affiliates.

system partners—by avoiding competitive networks that are close substitutes, but, on balance, offering a greater diversity of options than unintegrated systems, which are more likely to carry networks with similar offerings that are more direct competitors for viewers. These results are completely consistent with the Steiner model, and contrast with Klein's conclusions about the behavior of integrated systems.

21. The choice between competition and diversity has long been at the center of the policy debate over, first, broadcast television, and then, later, the performance of cable.[18] The consensus from empirical studies is that consumers place considerable value on having multiple choices from among popular programming options.[19] "Duplication" of programs by program category is actually highly valued, and the last of multiple offerings of the same "type" may be preferred to the first channel of some specialized, unique type of program.[20] Since cable's

[18] See the summary of the debate two decades ago about whether cable and pay television should even be permitted that is contained in Noll, Peck and McGowan, *op. cit.*, Chapter 1.

[19] Noll, Peck, and McGowan, *op. cit.*, discuss this issue at length, based on econometric analysis of the demand for cable and the amount of viewing per household. The early literature is surveyed in Paul W. MacAvoy (editor), *Deregulation of Cable Television*, Washington: American Enterprise Institute, 1977. Mayo and Otsuka, *op. cit.*, reached very similar conclusions in their analysis of cable demand just prior to the 1984 deregulation.

[20] For example, in the most recent study, Mayo and Otsuka, *op. cit.*, found that adding a duplicate affiliate of one of the three major networks significantly increased cable demand. Notice how this finding contrasts with the "Reply Comment" of the staff of the San Francisco office of the Federal Trade Commission, filed in FCC Docket No. 90-4, November 26, 1991, which made the common mistake of dismissing the importance of dropping duplicate networks, even the 216 stations that were within 50 miles of the cable system and the 178 stations that were in the same market area (Area of Dominant Influence). The rationale for their conclusion is that the second affiliate of the same network "may largely

inception, the primary means for cable systems to increase their penetration has been to add more channels that are similar to conventional broadcast stations, such as distant independeunt stations (including "superstations" like WTBS), duplicate network affiliates from nearby cities, basic cable networks with programming that is similar to that of commercial broadcast stations (examples are Arts and Entertainment, Nickelodeon, and TNT; however, even the specialized cable networks, like ESPN, Discovery Channel, and CNN, primarily specialize in programs that are similar to those found on broadcast channels), and premium cable services thaat are similar to the three major television networks.

22. The Spence-Owen model, which is similar to Steiner's but which allows consumers to value both diversity and duplication, predicts that monopolists over the distribution of programming (like local cable franchises) will

---

duplicate the programming" of the first affiliate and so be replaced by "an alternative to network programming that is more preferred by the system's customers" (p. 13-14). In reality, demand studies of cable television show that the only program alternative that is more popular with subscribers than a duplicate network affiliate is the first affiliate of a network. The most plausible explanation for this finding is that two affiliates of the same network are not regarded by viewers as perfect substitutes because, while their programming is *similar* in type and audience orientation, it is not *identical*. Different affiliates will provide different syndicated programs outside of prime time, different local news programs, and different sports events, will make different choices about which network programs to preempt for other nonnetwork programs, and sometimes will run the same network programs during different time periods, thereby permitting viewers who can receive both stations to avoid missing either an inconveniently scheduled favorite program or one of two simultaneously scheduled programs on two different networks without using a VCR. Furthermore, because these stations have large audiences and ready access to the most popular programming on television (network programs), they will preempt network programs only for very attractive alternatives. The studies of the demand for cable reveal that viewers realize this, and so place a high value of so-called "duplicate" signals.

undersupply competitive substitutes.[21] Whether cable monopolists will be efficient in supplying unique, specialized optios depends on the relative bargaining power of monopolists on both sides of the market, but it would not be surprising to find that vertically integrated systems are more efficient in supplying these specialized options. The empirical studies suggest that from the standpoint of consumers, vertically integrated monopolies supply too little competition in the form of similar or "duplicative" programming, while unintegrated monopolies may supply too little diversity.

23. The same theory that predicts these results—and is confirmed by the empirical research on the effects of the elimination of "must-carry" rules that is summarized in the next section [22]—unequivocally suggests that all cable systems will have an incentive to supply too little off-air programming. Carriage of a broadcast station does not enhance the firm's revenue from national advertising (as would carriage of an affiliated network); indeed the station could act as a competitor if it is a close substitute for an affiliated network carried on the system.

Both integrated and unintegrated cable companies benefit from channels for which they can charge a premium, and to which they can sell advertising. Presently, eight of the ten largest cable networks provide the local cable operator with at least two minutes per hour of program time for the sale of local ads. ("ad avails")[23] A

---

[21] A. Michael Spence and Bruce M. Owen, "Television Programming, Monopolistic Competition and Welfare," *Quarterly Journal of Economics*, Vol. 91 (1977), p. 103-126. The same point is made in Jack H. Beebe, "Institutional Structure and Program Choices in Television Markets," *Quarterly Journal of Economics*, Vol. 91 (1977), p. 15-37.

[22] See also the expert declarations of David Schutz and Tom Meek.

[23] *Cable TV Advertising*, August 18, 1994, p. 2 (Def. Exh. 409). I have also reviewed affiliation agreements, produced in the dis-

cable system prefers to carry such a cable network rather than an off-air channel if its advertising sales on the cable channel exceed the price paid for carrying the cable network, and if replacing the off-air channel with a cable network does not affect the ability of the cable system to sell subscriptions. Cable systems have an even clearer incentive to drop local television stations for home shopping and "infomercial" channels, because these cable networks pay cable systems to carry their programming.[24] In addition, under the same conditions, a vertically integrated cable system would prefer to carry its own affiliated network as long as the latter received any positive net revenues from advertising. (The integrated system would ignore the price for carrying the affiliated network as simply a meaningless internal transfer within the same corporation.)

24. As discussed in paragraph 14, above, the rapid growth of, and potential for further increases in, cable system advertising revenue give rise to an important incentive for cable systems to drop local broadcasters in favor of cable networks (which, unlike broadcasters, offer local ad avails). A recent development in the structure of the cable industry enhances the incentives of cable

---

covery of this case, under which the cable network supplies up to four minutes of avails.

[24] For example, a cable system in Fergus Falls, Minnesota, dropped QVC to carry a local television station when the must-carry rules were reinstated. During the seven months before the drop, QVC paid the cable operator $1,923.52 in sales commissions, which without must-carry was sufficient to induce the operator not to retransmit the local station. (Def. Exh. 423) Meanwhile, QVC is among the least watched and least desired cable television networks. One survey of cable subscribers found that the four lowest valued cable networks were shopping channels, and that only 2 percent thought QVC added substantial value to their serviec while 80 percent thought it added no value (Def Exh. 251). Another survey found QVC to be the fourth-lowest cable network in monthly value at $.20 per household (Def. Exh. 251).

systems not to carry off-air stations: the tendency to "cluster" acquisitions by major cable system owners.[25] The idea of clustering is to combine adjacent cable franchises in the same region. The cable industry has claimed that clusters allow economies of scale in management, maintenance, marketing, and advertising sales.[26] But it also raises important anticompetitive concerns. First, it eliminates potential facilities-based competition from "overbuilds" by adjacent systems. Second, it gives the resulting merged entity a greater incentive and ability to drop local stations from the system for the purpose of substituting advertising sold by the cable system for ads sold by the local station. On average, cable serves about sixty percent of households, so that if a metropolitan-wide group of cable systems drops a station, it actually can offer advertisers greater reach to consumers than can the dropped station. By contrast, a single cable system in a

---

[25] Examples of clustering are the joint ventures between Newhouse and Time Warner in upstate New York and North Carolina (*Communications Daily*, September 13, 1994); the acquisition of Summit properties in North Carolina by TCI (*TV Digest*, September 19, 1994); the acquisition by Time-Warner of Viacom's properties in Milwaukee suburbs; the acquisition of cable systems in the Denver area by TCI (*Cablevision*, May 4, 1994, p. 8); the acquisition of Cablevision industries' Rochester system by Time Warner, giving Time Warner virtually 100 percent of the Rochester market (*Multichannel News*, February 13, 1995, p. 60); TCI's acquisition of Chronicle Publishing's Western Communications, which added Chronicle's San Francisco subscribers, and Lenfest Communications' Oakland and Berkeley systems, and its pending offer to buy Viacom's Bay Area operation, which together would give TCI 85 percent of the Bay Area market, the nation's fifth largest (*Multichannel News*, March 6, 1995, p. 1); the swap between Multimedia and TCI which gave the former greater coverage in Witchita and the latter greater coverage in Chicago and Oklahoma City (*Multichannel News*, January 23, 1995, p. 36); and TCI's proposal to merge its Houston operations with the Houston system owned by Prime Cable Corporation in order to produce a system serving over half of Houston, the nation's eleventh largest market (*Multichannel News*, February 27, 1995, p. 1).

[26] FCC, *First Report*, p. 74.

fragmented local market, even if it drops a local channel, can offer only "niche" advertising—for the community it serves, with its special demographic characteristics.

25. If a cable entity does control all or nearly all cable systems in a television market, it has the potential to become the most important factor in the local advertising market. Total cable network factor in the local advertising market. Total cable network audiences now exceed the average audience of network affiliates on cable and the sum of the audience for independent stations. As yet, cable has not succeeded in converting its audience share to a comparable advertising share, but numerous industry reports state that this is an industry objective that will be achieved by local advertising consortia and clusters.[27] Some of the explations for consortia and clusters refer blatantly to the possibility of exercising market power: "We don't have to worry about other cable operators mucking up the rates." [28]

26. The desire to achieve clusters is an important factor behind the recent wave of mergers in the cable industry. During the period from March to September 1994, the Herfindahl-Hirschman Index of concentration in the national cable industry increased from 898 to 1051.[29] The industry believes that this concentration will increase.

---

[27] The following discovery documents relate to this claim: Def. Exh. 408 at 2 (cable targeting broadcast TV revenues), Def. Exh. 408 at 4 (broadcast TV the obvious revenue target), Def. Exh 242 (clusters and cooperative agreements motivated by desire to gain or strengthen market dominance), Def. Exh. 233 (cable not getting its "fair share" of ad revenues and ought to change strategy to achieve it).

[28] Steve Rizley, Greater Phoenix Interconnect (a cable consortium), as quoted in *Multichannel News*, November 28, 1994, p. 65.

[29] FCC, *First Report*, p. 70-71. This calculation assumes that the mergers will be approved; however, the cluster mergers are under investigation by the Federal Trade Commission (*Multichannel News*, November 28, 1994, p. 1).

According to TCI's Gary Howard, "everyone outside the top 5-10 MSOs is for sale," [30] and according to the Turner Cable Network Sales Mission Statement, the top ten MSOs are expected to grow from 62 percent to 85 percent of subscribers by the end of 1996.[31]

27. The aggregation of cable systems is a decidedly mixed blessing. A major advantage, besides the economies of scale asserted by the industry, is that a metropolitan-wide cable system, integrated with similar systems across the nation, is comparable in size to a Bell Operating Company or GTE, and so represents a possibility significant competitive opportunity for local telephone service. The problems, of course, are that cable advertising and vertical integration create perverse incentives and a realistic opportunity for cable systems to remove over-the-air TV stations from their line-up and, in so doing, undermine the financial viability of some of their competitors.

28. The incentive to drop local stations has also been substantially increased by the imposition of rate regulation on cable television systems. The structure of cable regulation is complex, but a reasonably accurate generalization is that basic cable service (over-the-air stations plus a few cable networks) is tightly regulated, and higher "tiers" (groups of cable networks) and "a la carte" cable networks (cable networks for sale on a per-channel or per-program basis) are unregulated. This system of regulation makes carrying off-air channels a less profitable option.[32]

---

[30] Def. Exh. 267. TCI's 1994-95 plans are to continue to acquire more systems *Id.*

[31] Def. Exh. 405.

[32] Blair Sinclair-Fellner, "The Future Success of Niche Networks," Turner Broadcasting, May 16, 1994, states: "Because of reregulation cable operators do not want to carry services on basic or extended basic . . . Right now operators do not want to carry anything new as they attempt to react to what has happened to them." Def. Exh. 98. The Same point is made in several submis-

29. Whether cable systems have an incentive to drop off-air signals in order to favor their cable affiliates or to capture more advertising depends in part on the response of viewers to drops of local stations. In the past, some drops have caused reactions by consumers and local governments.[33] But for the most part cable systems do not face a significant financial incentive to keep on local stations other than network affiliates and the primary PBS affiliate.[34] The only source of revenues to a cable oper-

---

sions to the FCC (Docket 92-266) requesting reconsideration of the FCC's pricing rules, including those by C-SPAN (6/7/94) (Def. Exh. 69) and by Henry Geller for Public Interest Petitioners (6/27/94). Def. Exh. 405.

[33] NCTA compiled a list of such examples. Def. Exh. 403. The three-week drop of the three primary networks in Corpus Christi, which clearly would have the maximum viewer impact, caused only 4 percent of subscirbers to drop service and slightly more than half to acquire an A/B switch. Def. Exh. 291.

[34] The research literature finds relatively low elasticities for both price (in the range of zero to .2) and penetration (in the range of zero to .7) from adding more channels, whether independent stations or cable networks, with the actual numbers quite sensitive to the details of the study. Thus, if a cable system has fifty channels, including all over-the-air networks, the leading basic cable networks, and at least one or two pay channels, the combined revenue effect through prices and subscriptions of another channel of average attractiveness is likely to be under one percent of revenues. Of course, at this system size, the 51st channel is not likely to be of average attractiveness, for the cable system will generally add the most attractive offerings first. Unfortunately, statistical analyses have not yet succeeded in squeezing from the historical data information about how the elasticities of new channels fall as more channels are added or in differentiating the revenue effect among most categories of channels. The common finding (with some disagreements on specific issues) is that major network affiliates (including duplicates) have the largest effect on price and subscriptions, that cable networks, noncommercial stations, and independent stations can not be differentiated, and that pay networks actually suppress basic prices and subscriptions, but of course this last effect is more than compensated by the increased pay revenues enjoyed by the cable system.

ator from carrying a broadcast channel is the effect it has on the revenues from subscribers to basic service, and research on the demand for cable finds that cable penetration and basic subscription fees are not substantially affected by marginal changes in channel composition at the capacity level of the vast majority of systems.[35] The preference for a cable network over a local UHF independent or noncommercial station derives from the opportunity that the latter presents for generating additional revenues through advertising, and the possibility of shifting channel allocations to less regulated tiers where prices can be expected to rise more rapidly in the future than for regulated basic service.[36]

---

[35] These research findings were confirmed by a Time-Warner survey, which found that consumers were "troubled" by proposals to drop local independents, but would nevertheless continue to subscribe to cable if these stations were dropped. (Bates TWD-60627) This finding makes great sense: because cable systems derive revenues from advertising and premium channel sales as well as subscriptions, it is not surprising that they expand capacity beyond the point at which the last channel added contributes to increasing the number of households that subscribe.

[36] In his expert report for plaintiffs, Stanley M. Besen argues that dropping over-the-air stations is socially unimportant because the dropped stations account, by his calculation, for only about one percent of viewing. Assuming that figure is correct, the relevant comparison, of course, is between the dropped stations and the cable networks that are substituted for them. In reality, viewers exhibit low interest in marginal cable channels. A study by Beta Research, "Evaluation of Cable and Broadcast TV Services among a National Sample of Cable TV Subscribers," (Def. Exh. 387) found that only 8 percent of cable customers have spent more than ten minutes watching the Eternal Word network; the numbers were 16 percent Mind Extension University and 14 percent for VISN/ACTS. The same survey found that 80 percent or more of all subscribers found each home shopping network to be without value. When planning to enter as combined cable and off-air network, Warner Brothers anticipated audience ratings of 0.7 percent in the day and 1.4 percent in prime time, as against 2.3 percent prime ratings for USA and ESPN cable networks (Def. Exh. 252). Similarly, the ratings for the Cartoon Network here 1.4 and for the Sci Fi Channel 0.4. Finally, in Corpus Christi, when the cable system

30. Considerable evidence supports the view that cable systems will, in fact, drop some stations, and not add new ones, due to the elimination of must carry.[37] There are two reasons to expect substantially more stations to be dropped or denied access after the most recent repeal of must-carry rules. First, the National Cable Television Association, out of concern for an adverse political reaction if extensive drops occurred, put forth considerable effort with its members requesting them not to drop local stations, including writing a letter to all of the top 100 major system operators.[38] If the courts rule that legislation requiring cable carriage of local stations is prohibited, then cable systems that extensively drop local stations

dropped the three primary networks, most of the audience shift went to independent stations, not cable networks, causing the TCI analysis to opine that "cable networks still have much brand-building and tune-in promotional work to do" (Def. Exh. 291).

[37] In the mid-1980s, the temporary elimination of must-carry rules caused some stations to be dropped, and some new stations to be denied carriage. For example, see "Cable System Broadcast Signal Carriage Survey," Policy and Rules Division, Mass Media Bureau, Federal Communications Commission, September 1, 1988. Some of the dat on drops is summarized in the House Committee *Report, op. cit.*, p. 52. The cable industry disputed these data, but their study also provides many examples of drops during the same period. See "Broadcast Station Carriage Survey," Research and Policy Analysis Department, National Cable Television Association, September 1988. In this proceeding, all of the expert reports that deal with this issue, although they use slightly different methods to measure the impact, agree that drops did occur in the prior era when must-carry was not in force. Plaintiff expert Stanley M. Besen, for example, estimates that nearly 30 percent of local UHF independents and 16 percent of local noncommercial stations were dropped when must-carry was not in force during the late 1980s. His figures underestimate the number of local stations that were dropped because he does not count those stations with audience ratings under one-half of one percent. For a thorough study of the extent of drops and the number of viewers affected that is not based on an arbitrary definition of "significantly viewed" stations, see the Expert declaration of Tom Meek.

[38] Def. Exhs. 312, 314, 317, 318, 321, 399-401, 425.

would not risk political reversal. Second, the incentives to reduce the carriage of local over-the-air stations have increased due to rate regulation and the growth in importance of advertising on cable networks. In addition, some cable networks are offering bounties to cable systems for dropping an off-air station for the purpose of clearing a channel for their network.[39] A survey of major cable systems found that many expected to drop some local stations after must-carry was finally stricken.[40]

31. In addition to station drops, repositioning of stations to disadvantageous channel locations is also likely to occur. Considerable empirical work confirms that the tradiitonal VHF channel numbtrs generate substantially higher audience ratings for exactly the same program than higher channel numbers.[41] Cable networks are willing to pay a premium to obtain low channel numbers,[42] which are frequently occupied by local stations. Cable systems have several incentives to shift cable networks to these channels: to capture advertising benefits; to be charged lower carriage costs by cable networks that provide bonuses if they are carried on lower channel numbers; and, if the cable system is vertically integrated, to benefit a corporate affiliate by increasing its audience ratings and, hence, its advertising revenues.

[39] Court TV has been aggressive in offering such deals (Def. Exh. 398 and Turner developed a "hit list" of vulnerable stations (Def. Exh. 271, 395, 425). (Similar plans are laid out in (Def. Exh. 388). In addition, some cable networks provide this incentive indirectly by offering much lower carriage fees to systems if their network achieves high penetration. For example, the rate schedule of some affiliation agreements I have reviewed offer fifty percent discount in the carriage fee if more than fity perecent of basic subscribers also subscribe to the networks in question. This encourages a cable system to place TNT on the "basic" tier rather than "extended basic" or some other tier.

[40] Def. Exh. 414.

[41] Def. Exhs. 284, 300, 303, 412, 413.

[42] Def. Exh. 414.

32. Thus, the economics of unregulated cable can be expected to cause an inefficient allocation of cable channels to local over-the-air stations. Judged against a standard of tse channel allocation that is preferred by viewers, cable systems have the incentive and the power to carry too few over-the-air channels, and when these channels are carried, to discriminate against them in channel assignments.

33. The last important issue that has arisen in the debate about must-carry is whether cable capacity is so scarce that a significant hardship is imposed upon cable systems and viewers by requiring systems to carry local channels. In fact, cable capacity is large and growing, and with modern cable technology can be expanded at very low cost per channel.[43] Between 1985 and 1992, the average channel capacity of cable systems is estimated to have increased by more than 50 percent, from 25 to 38 channels.[44] New digitalized, channel compression technologies are expected to bring enormous expansion of cable capacity.[45] The driving forces behind this expansion are, first, the desire to add unregulated services, and, second, anticipation that in several years multichannel video service might become more competitive through new technologies and the entry of telephone companies. Hence, the motivation for expansion is not reduced, and may be enhanced, by price regulation of basic service. Thus, cable is distinctly not too capacity constrained to satisfy must-carry requirements, and imposing these requirements on cable will not impose financial harm on the industry.

---

[43] For a more complete treatment of this issue, see the expert declarations by Charles Jackson and Harry Shooshan.

[44] Paul Kagan, "Channel Compression: A Strategic Aanalysis," December 1992 (Def. Exh. 153).

[45] *See* Jackson declaration. TCI is aggressively pursuing the adoption of channel compression in its systems (Def. Exh. 419).

34. The planned increase in capacity will not be used for basic service, including the carriage of local stations, unless regulatory rules require it. This outcome is caused by three factors: (1) cable systems no longer need local channels to achieve high penetration; (2) cable prefers to use the capacity for channels in which it has a financial interest through advertising and/or vertical integration; and (3) rate regulation of basic service eliminates the incentive to provide local stations on the cheapest, most regulate dservice element.[46]

35. Must-carry is therefore a natural complement to rate regulation. In any inoustry, an attempt to regulate only some of the activities of a firm with substantial market power will cause that firm ot shift its attention to unregulated activities, giving rise to additional regulatory rules: the "common carrier requirement" to serve all customers at posted prices, separations requirements when dealing with vertical affiliates, and regulatory safeguards against cross-subsidies and other anticompetitive forms of self-dealing. Cable television is no exception. Cable systems do not wish to avoid carrving local stations because doing so is expensive, or because they cannot afford to do so. Instead, they wish to minimize local station carriage to enhance profits from unregulated sources, such as pay tiers and advertising. Whereas the incentive to undersupply off-air signals has always been present, it is enhanced by rate regulation, the growth of cable advertising, and the trend towards clustering mergers and

---

[46] An A&E Network executive explained to his affiliates that regulation focuses cable systems on pay offerings (Def. Exh. 115 and Phil Laxar of KBLCOM confirms that their capacity enhancements will go to unregulated pay services (Def. Exh. 279). A Court TV executive reports that Time-Warner and TCI are also focusing on growing unregulated tiers of offerings (Def. Exh. 424). A Warner Brothers internal report explains why cable regulation will cause cable systems to reallocate their efforts towards unregulated sources of revenues, such as pay channels and home shopping (Def. Exh. 252).

cooperative marketing ventures among cable systems. Thus, cable's reasons for opposing must-carry stem from its financial incentives, which lead it to seek to minimize the scope of basic service to the extent that is politically feasible.

The Economics of Stations and Networks

36. The basic economics of broadcasting companies was extensively studied in the 1970s; few new insights have come forth since then.[47] The core theoretical idea that drives our understanding of the behavior of broadcasters (whether stations, off-air networks, or cable networks), derives from the Crandall-Park model of program selection[48] A profit-maximizing commercial over-the-air broadcaster, whether a station or a network, produces viewer attention to sell to advertisers. The means available for delivering viewer attention are to acquire programs and transmission equipment. A greater expenditure of program quality will cause an increase in the fraction of the viewers who receive a signal to decide to watch it (i.e., will improve the station's ratings). If the absolute number of potential viewers is larger, then the ratings increase derived from an improvement in quality will produce a greater increase in the number of houserolds watching and hence in advertising revenues. Hence, all else equal, a station is more likely to find an increase in its expenditures on programming ot be worthwhile if it gains access to a larger potential audience. Hence, when a station is

[47] A great deal of factually outdated but conceptually generally valid analysis can be found in the two-volume "network inquiry" study that was published in 1980 by the FCC, *New Television Networks: Entry, Jurisdiction, Ownership and Regulation.* See also Noll, Peck and McGowan, *op. cit.*

[48] Robert W. Crandall, FCC Regulation, Monopsony, and Network Television Program Costs," *Bell Journal of Economics* (Autumn 1972), and Rolla Edward Park, "New Television Networks: An Update," Rand Corporation Research Note N-1526-FCC, August 1980, is reprinted in the network inquiry report, *op. cit.*

added to a cable system, its potential audience increases, so that it can expect a larger payoff in advertising revenues from an increase in its program expenditures. Indeed, the Expert Report of David Schutz verifies each key point in the above analysis: cable carriage is positively associated with station revenues and with improvements in programming.

37. Cable networks are very similar to over-the-air networks, but with an additional wrinkle. Cable systems, more easily and cheaply than over-the-air broadcasters, can charge viewers directly for access to programs. Consequently, some cable networks can and do impose fees on cable systems based on the number of cable customers. Sometimes this fee is based on the number of basic cable subscribers, and sometimes on the number of customers who pay for access to the network (or the tier that includes the network). In reality, the strategies of cable networks vary. Some place total reliance on advertising and pay the cable system for carrying its signal (such as shopping channels). Some sell advertising and charge the cable system a fee to carry the channel (such as most of the basic cable networks like CNN, ESPN and TNT). Most, but not all, of these networks also provide some time (usually two minutes per hour) during which the cable system can insert its own advertising. And some place total reliance on payments from viewers and carry no advertising (such as HBO). Most cable networks are in the middle category, relying on both advertising and a carriage fee. Regardless of the details, the core idea behind a programmer's strategy remains the same: the object is to increase expenditures on programs until the revenues from the last viewer attracted balance the program costs that were necessary to induce that viewer to watch.

38. A similar story also applies to noncommercial broadcasters. Michael Klein has found that hours of operation and expenditures on original programming are positively

correlated with revenues for noncommercial stations.[49] Noncommercial broadcasters pursue objectives other than profit, providing the maximum feasible amount of programs (given financial constraints) that are perceived to be undersupplied by commercial broadcasting, including programs for specific target audiences (e.g., children) as well as for the general public.[50] Thus, the details about the kinds of programs offered differ between the commercial and noncommercial sectors, but the basic argument is the same. Noncommercial broadcasters need revenue to pay for their programs, and they derive revenue from contributions by viewers, nonprofit institutions, and corporations. These revenues are greater if the audience reached by the station is larger.[51] The primary difference between noncommercial and commercial broadcasters is that the former spend all of their income, rather than keep some for profits. Hence, a noncommercial station increases spending on programming past that point where the last dollar spent generates a dollar of revenues, instead spending until its funds are exhausted.

---

[49] Michael Klein, "The Impact of Revenue Changes on Public Television Licenses," Michael Klein Associates, November 1982, and "The Impact of Revenue Changes on Public Television Licensees: Fiscal Years 1982-83," Michael Klein Associates, September 1985. To my knowledge, the only other detailed study of the economics of public television is the now factually outdated chapter of Noll, Peck, and McGowan, *op. cit.*

[50] See the Expert Report of M. Peter Downey for a detailed statement of the management objectives of public television stations.

[51] The expert declaration of Richard Feldman documents the effect of drops on audience ratings. The expert declaration of Jonathan C. Abbott demonstrates how membership is affected by loss of revenues, and his report and the expert declaration of M. Peter Downey explain how the effect of drops on both members and revenues affects not only local programming but the quality of the national programs supplied by the Public Broadcasting Service. The declarations submitted by various public television stations on behalf of the public broadcaster defendants contain several examples of how the loss of cable audiences by dropped or repositioned noncommercial stations reduced viewership and contributions. According to David J. Brugger, the President of the National Association of Public Television Stations: "If we lose viewers, we lose the viewers' contributions, and that is now the single largest source of funds for public television." *Cable Television*, Hearings Before the Subcommittee on Telecommunications and Finance of the House Committee on Energy and Commerce, March 30, and May 11, 1988, p. 522. (CR Exh. 9).

39. An extremely important insight from this basic conceptual model of broadcasting is that, all else equal, a broadcaster that has access to more viewers will make greater expenditures on program quality and on the number of hours on the air. For example, all else equal, a station in a larger market will spend more on programs than a station in a smaller market, and a network with access to a larger potential audience through more affiliates (whether over-the-air, cable, or both) will spend more than a smaller network. Hence, if any event transpires to reduce the potential audience of a station or network, or in a competitive environment if any given station or network is subject to significantly more competition that further fragments the audience, average program quality and number of hours of programs offered will decline.

40. The importance of these concepts to the structure of the broadcasting industry is revealed in the synergy that emerged in the 1970s and 1980s between cable and over-the-air stations. The extensive cabling of the nation extended the reach of UHF stations because it overcame a substantial part of the "UHF handicap." UHF stations had difficulty accessing all of their potential audience over the air because of the inferior signal propagation characteristics of the UHF band (viewers distant from the transmitter were more likely to suffer interference problems with UHF than VHF stations). When viewers subscribed to cable, the UHF stations were received with greater clarity, and sometimes on a valued lower channel

number. As a result, they reached a wider audience, inducing more stations to enter the industry and causing the fraction of households with access to ten or more over-the-air channels to grow from 21 percent in 1975 to 54 percent in 1990.[52]

41. The final factor to take into account in analyzing the broadcasting industry is the behavior of program production talent. An important element of the economics of broadcasting is that two programs that, intially, cost the same to produce may have very different audience responses, with one becoming very popular while the other does not. In this case, the talent involved in the more popular program—writers, actors, production personnel, and producers—can emerge with a unique "formula" that can not be successfully duplicated. These personnel can simply charge more for their program than can other teams of talent.[53] Likewise, for programs sold directly to individual program distributors, whether local television stations or cable systems, the owner of the program can engage in price discrimination. Bidding among outlets in a locality (the stations plus, perhaps, the cable systems) will cause the total rights fee to be higher for more popular programs, and higher in a large metropolitan area than in a small one.

42. The relevance of this analysis to must-carry is that whether a local station is given access to a cable system,

[52] Florence Setzer and Jonathan Levy, "Broadcast Television in a Multichannel Marketplace," FCC Office of Plans and Policy Working Paper No. 26, June 1991, (Def. Exh. 415) conclude: "Not only has the number of television signals increased dramatically over the past 15 years, but over-the-air service is such that most households have considerable choice in programming even without cable. Ironically, however, this expansion of over-the-air signals was made possible by cable." (P. 18.)

[53] See John R. Woodbury, Stanley M. Besen, and Gary M. Fournier, "The Determinants of Network Television Program Prices," *Bell Journal of Economics* (1983), and Noll, Peck, and McGowan, *op. cit.*

and if so, on what channel, is an important factor in determining the quality of its programs. Today more than half the homes subscribe to cable, so that over half the potential audience of a station depends on whether it is carried on local cable systems. Generally, stations obtain somewhat lower audience shares on cable because they face more competition, but even so a station that is dropped by all the cable systems in its market faces the loss of between forty and fifty percent of its audience, which can threaten the viability of weaker stations but in any event would lower the quality of programs and hours of operation of those that survive.[54]

43. The primary policy concern from this event is that the other half of the station's audience—those who do not subscribe to cable—are significantly harmed. Indeed, cable systems have a positive incentive to harm the stations that are watched by these viewers as a means of inducing them to subscribe to cable to make up for the lost quality and quantity of programs available over the air. Whereas a single cable system in a fragmented market with numerous cable systems is unlikely to be able to damage seriously an over-the-air station by dropping it, with clustering and other joint arrangements all cable systems acting together do have such an opportunity.[55] Moreover,

[54] This general argument appears in Gary M. Fournier, "An Economic Analysis of the Appropriateness of a New Must-Carry Rule for Broadcast Stations and Cable Operators," submitted by the National Association of Broadcasters in FCC Docket 85-349, January 29, 1986, (CR Exh. 155) and Michael O. Wirth, "Cable's Economic Impact on Over-the-Air Broadcasting," *Journal of Media Economics*, Fall 1990 (CR Exh. 14; Def. Exh. 410).

[55] UHF independents, in particular, are frequently financially precarious. A study by David Pierce of the NCTA estimated that, in 1989, the median net cash flow of independent stations was only $136,000, and the cash flow at the 25th percentile was —$741,000 (Def. Exh. 404.). The more than 25 percent of UHF independents that were being dropped during this period according to the Expert Report of Stanley M. Besen were likely to have been concentrated among this poorly-performing group, so that the belief that their

members of a group systems have a stronger incentive to coordinate their decisions to drop a station because collectively they are more likely to damage the station and to experience increased penetration (and profits) if viewers turn to cable after off-air options are reduced. In addition, of course, cable systems have further incentives to drop local stations due to the opportunities for increased revenues from advertising and viewer payments for additional cable networks outside the system of rate regulation, as described above.

44. The salient fact about the decisions of cable systems to drop over-the-air stations is that this is not the result of normal competitive forces between over-the-air and cable broadcasters. For the reasons discussed above, the outcome of this process is inefficient and harmful to viewers because the substitution of cable networks for over-the-air stations is more extensive than is desirable. *Cable systems, pursuing their private economic interests, provide too little access to over-the-air stations unless required to do so by regulatory rules.*

45. Still another problem arises with respect to local advertisers. Much of the advertising sold by local cable advertisers is, and is expected to be, targeted at specialized audiences.[56] Indeed, one of cable's advantages is that it can deliver different advertising on the same channel to different homes in the same cable network.

46. The main competitors with cable systems for the sale of advertising to very small local audiences are over-the-

---

viability is at stake over the future of the must-carry requirement is hardly unjustified.

[56] According to TCI executive Jim Birschbach, in areas where clustering and cooperative advertising ventures has aggregated the cable audience across many systems, TCI expects to continue to sell advertising to small fragments of the audience. According to Birschbach, "Our greatest revenue potential is still local-local." *Multichannel News* November 21, 1994, p. 65. This strategy is further evidence that increased market power, rather than audience aggregation, is an important element of the clustering strategy.

air independent television stations. Failing to carry these stations benefits clustered cable systems in two ways. First, it knocks out the main competitors on the cable system. Second, in markets with several independents, it replaces a competitive system among cable plus several separate independents with a single seller—the combined cable entity. Thus, imperfecting the local advertising market provides still another incentive for cable systems to engage in too little carriage of local television stations.

Conclusions

47. The preceding analysis supports the following conclusions. First, cable systems have a strong economic incentive to drop local television stations from carriage, or, if they are carried, to reposition them to inferior channel assignments. Second, these incentives have been strengthened in recent years by the wave of cluster margers and cooperative advertising ventures and by the imposition of rate regulation for basic service. Third, dropping or repositioning existing stations and refusing to carry established ones harms viewers who do not subscribe to cable by reducing the quality and quantity of broadcast television that is available to them. Fourth, repositiong or refusing to carry local commercial stations harms local advertisers by concentrating the market for the sale of advertising to small, targeted local audiences. Fifth, the private incentives operating upon cable in deciding how to allocate channels between cable networks and local stations lead to an economically inefficient allocation, with too few local stations and too many cable networks. Sixth, in the current environment in which cable capacity is large, growing and inexpensive, and cable profits are extremely high, must-carry provisions do not impose significant financial harm on cable.

May 24, 1995

/s/ Roger G. Noll
ROGER G. NOLL

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

APPENDIX TO
PUBLIC BROADCASTER DEFENDANT-INTERVENORS'
MOTION FOR SUMMARY JUDGMENT

VOLUME 4

(EXPERT WITNESS DECLARATIONS)

* * * *

Dated: May 26, 1995

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

[Caption Omitted]

DECLARATION OF JONATHAN C. ABBOTT

1. I am Jonathan C. Abbott, Senior Vice President of Development and Corporate Relations of the Public Broadcasting Service ("PBS"). In that position, I supervise PBS's efforts to assist public television stations in generating voluntary contributions and support from individuals, corporations, and foundations. I have held this position since I joined PBS in 1992.

Professional Background

2. Prior to joining PBS, I served as Vice President for Marketing and Development for KQED, Inc. ("KQED") in San Francisco, California. KQED operates public television and radio stations serving Northern California. At KQED, I managed all aspects of the company's fundraising, including individual, corporate, and foundation giving. I worked at KQED for apporximately five years. Prior to working at KQED, I was a management consultant at KPMG/Peat Marwick in New York City for approximately two years. I hold an MBA degree (with emphasis in marketing and public management) from Stanford University, Stanford, California, and a B.A. degree from Columbia College, Columbia University in New York, New York. During the 1987-1988 academic year, I was a teaching associate for the Strategic Management for Nonprofit Organizations course, offered as part of the Public Management Program curriculum at the Stanford Graduate School of Business. In connection with my experience at Stanford Graduate School of Business,

I authored *KQED-TV San Francisco*, a case study for the Stanford Graduate School of Business curriculum.

3. The opinions expressed below are based primarily on the knowledge and experience I have gained in connection with the positions I have held at PBS, KQED, and KMPG/Peat Marwick. This includes numerous contacts I have had over the years with fundraising personnel at public television stations around the country. In addition, I have consulted certain data from PBS files and other sources and made certain computations based on those data, as indicated below. Where appropriate, I have cited the source of my information. I am generally aware of the expert opinions that Mr. M. Peter Downey and Dr. Roger Noll intend to express concerning public television in this case, and I believe my opinions are consistent with, and supportive of, their views.

Summary of Expert Opinion

4. The ability of a public television station to meet its operating expenses and deliver quality programming and other services to its local community depends in large part on voluntary contributions from its viewers and support from corporate underwriting and foundation grants. The present pressure to reduce the government funding provided to public television through the Corporation for Public Broadcasting ("CPB") increases the importance of individual contributions, corporate underwriting, and foundation grants to the financial health of individual public television stations. As the federal appropriation for CPB decreases, other sources, particularly viewer contributions and corporate and foundation underwriting, must fill the gap. Accordingly, now more than ever public television stations' financial stability depends on their continued ability to obtain alternative sources of funding from individual contributions, corporate underwriting, and foundation grants.

5. One of the most critical factors in determining whether a station is successful in obtaining such viewer

contributions and corporate and foundation support is the station's access to viewers. To the extent a station's ability to reach its viewers is denied or diminished—either by the unilateral actions of a cable operator or otherwise —the ability of a station to meet its operating expenses and service its local community would be severely jeopardized.

6. While it may be difficult to accurately quantify the exact amount of financial harm to public television stations resulting from lost access to viewers, it is possible to develop a model that would provide an estimate of the potential viewer contributions lost. Such a model would provide an indication of the potential level of one type of financial harm to public television stations that might have resulted from lost access to viewers in the past. More important, such a model would provide a means for predicting the potential magnitude of harm to public television stations that might result from lost access to viewers in the future.

I. Voluntary Contributions From Viewers

A. Voluntary Contributions Are An Important Source of Funding

7. Donations from individual viewers, who have access to a station's service, have become an increasingly important funding source for public television stations. Individual donations include station membership revenue, contributions from non-members, major gifts, bequests, planned gifts from individuals, and auction revenue. Today, such viewer donations constitute public television's single largest revenue source. For example, based on data compiled by CPB, individual contributions to public television for fiscal year 1992 totaled more than $316 million, which constituted more than 22.8 percent of the financial support for public television stations from all sources for that fiscal year. A copy of the relevant page of the CPB report is attached hereto as Exhibit A.

8. Individual donations generally provide the most stable and reliable income to public television stations. Based on the revenue activity of station contributions as reported to PBS through the years, approximately one-third of a public television station's contributor base consists of viewers who have renewed their support during three or more consecutive years. Retaining these long-term donors is critical to a public television station's financial health. Because the per-member cost of acquiring new members is substantially greater than the cost of retaining existing members, public television development professionals build their station's fundraising margin on the retention of long-term donors. Accordingly, the successful establishment of long-term, donor relationships depends on the public television station's ability to continue providing donors with the type of program service they have supported in the past. *See* various PBS Development Reports that have been produced in this case. *See also* PBS, *Life Time Value of Membership: A Model for Analyzing Membership Strategies and Techniques* (July 1993).

B. Voluntary Contributions Require Access to Viewers

9. A public television station's ability to obtain donations from individuals and sustain contributions from retained members depends primarily on the station's access to viewers. An individual who cannot watch a public television station usually has little incentive to support it financially. Certainly, individuals without access to a public station will not receive messages broadcast by the station regarding pledge drives, auctions, and other fundraising events.

10. Thus, while the operating circumstances and revenue sources of individual public television stations may differ, each station's ability to maintain or increase the revenue it derives from individual contributions is dependent upon the number of potential viewing households

to which it has access. For example, assuming a public television station had access to only ten viewing households in a community, its potential to generate financial support from its viewers would, by definition, be limited to those ten households. If the public television station's access were expanded to 100 viewing households, its target contributor base would increase ten-fold.

11. Based on the foregoing, if a public television station loses access to a given number of households, it can be predicted with reasonable certainty that the station will lose a number of viewers and, hence, individual contributions from those viewers. While it may be difficult to accurately quantify such lost contributions at any given point in time, the lost contributions are very real for the individual station affected and could be very significant if that station experiences a considerable loss of viewer access to its signal. As indicated by CPB revenue figures produced in this litigation, many public television stations have small operating budgets; a loss of even a few thousand dollars in individual donations could have a significant negative effect on that station's operations or could impair the station's ability to maintain—let alone expand or improve—its programming.

C. Cable Drops and Shifts Result in Lost Viewership Contributions

12. Based on numerous discussions with fundraising professionals at many public television stations and my own experience at KQED, it is my expert opinion that a station would likely experience a loss in individual contributions as a result of an adverse action by a local cable operator. Such adverse actions include shifting the channel on which the public television service is received or dropping the station from the cable system altogether.

13. Specifically, a drop from a cable system would ordinarily result in a loss in viewers' access to the public

television station, which in turn would likely result in a diminution in contributions to the station. While there may be some cable subscribers who are willing and able to overcome substantial obstacles to receiving their local public television station off the air, it is my experience and understanding that, as a practical matter, cable subscribers are often disinclined to view any television station that is not carried on their cable system. Similarly, a channel shift may result in viewer confusion leading to viewership loss, which in turn would affect individual contributions.

14. Accordingly, any such adverse action by a cable operator would disrupt the public television station's relationship with subscribers who are long-term donors and on whose loyalty the station relies to ensure a steady, predictable level of community support that stabilizes its operating income year to year. Over time, the value to a station of each of these contributor relationships could total hundreds of dollars per household.

15. The cumulative effect of a series of small revenue losses at individual public television stations is to deprive the public television system as a whole of resources it might otherwise have used to increase the amount or quality of programming produced on a national level.

D. Model of Potential Dollar Contributions Lost Per Household

16. Because access to households is a necessary component of viewership contribution, it is possible to create a model that would approximate, at the national level, an average range of annual dollar contributions per household that has access to public television ("Model"). Such an average would provide an estimate of the potential annual dollar amount of contributions represented by each household that has access to a public television station. By inputting the total number of households to which a public station is denied access as a result of cable drops

(or other adverse cable action), it would be possible to utilize the Model to estimate the potential total dollar amount of contributions lost.

17. In constructing such a Model, it would be appropriate to include average figures for at least the following three components:

a. of the number of households that have access to a public television station, the percentage that would actually view the public television station ("Viewership Percentage");

b. of those who view a public television station, the percentage that would actually make a voluntary contribution ("Contribution Percentage"); and

c. the average annual dollar amount of contribution per contributor ("Average Contribution").

18. *Viewership Percentage.* In general, a significant percentage of households that receive a public television station's signal will view that signal * * *. In order to account for variations in viewing percentages from station to station and from market to market, I have taken an average of the viewing percentages for the stations in the top half of the sample and those in the bottom half of the sample * * *. A copy of the underlying calculations is attached hereto as Exhibit B.

19. *Contribution Percentage.* Of the viewers of a public television station, a certain percentage will contribute money to a public television station. Based on data available, the percentage of contributing viewers ranged from a national average of approximately 8.3% in fiscal year 1985 to approximately 10.1% in fiscal year 1992. These percentages have improved in the last decade because of improvements in fundraising techniques. A copy of the underlying calculations is attached hereto as Exhibit C.

20. *Average Contribution.* Based on data available, it is possible to calculate the Average Contribution. Over

time, the Average Contribution has also increased from an average of $46.15 per contributor in fiscal year 1985 to $56.51 in fiscal year 1992. A copy of the underlying documents and calculations supporting these figures is attached hereto as Exhibit D.

21. Multiplying these three components—Viewership Percentage, Contribution Percentage and Average Contribution—would yield a range of averages that represent the dollar contribution per household that has access to a public television station. For the period from fiscal year 1985 to fiscal year 1992, the approximate ranges of average dollar contributions per household were as follows:

Fiscal Year	Approximate Range of Average Contributions Per Household
1985	$0.47-$1.97
1986	$0.52-02.18
1987	$0.58-$2.44
1988	$0.60-$2.50
1989	$0.64-$2.69
1990	$0.67-$2.80
1991	$0.68-$2.85
1992	$0.70-$2.93

E. Lost Access to Viewers Results in Loss of Potential Dollar Contributions

22. By applying these approximate ranges of average dollar contributions per household, the Model could be used to illustrate the potential magnitude of the amount of dollar contributions lost as a result of lost access to viewers. This would be accomplished by inputting the number of households lost and multiplying this number by the approximate range of average contributions lost per household.

23. To illustrate, I have been provided with data compiled by Cable Data Corporation that I understand represents the number of subscribing households to cable systems that dropped certain local public television stations that had been previously carried during all or a part of the fiscal years 1985 through 1992 ("Cable Drops"). Because each cable system has a certain number of households that subscribe to its service, each Cable Drop means that the station dropped was denied access via cable to the number of cable households subscribing to that cable system.

24. For example, in fiscal year 1992, public television stations that were within 50 miles of their respective cable system's headend were apparently denied access to approximately 9,125,511 cable households as a result of Cable Drops.[1] Applying the approximate ranges of average contributions per household lost, it appears that the aggregate dollar contributions to public television stations that were potentially lost in fiscal year 1992 as a result of Cable Drops were in the range of approximately $6,406,325 to approximately $26,771,148. A summary of the range of potential losses in contributions resulting from Cable Drops for the period from fiscal year 1985 to fiscal year 1992 is as follows: [2]

[1] Because the Model applies only to stations that solicit viewership contributions, I have not included the number of subscribing households lost by WNYE as a result of cable drops because WYNE is among a handful of public television stations that do not solicit viewership contributions and are therefore unrepresentative of typical public television stations.

[2] A more detailed breakdown of this summary is attached as Exhibit E.

Fiscal Year	Approximate Number of Cable Households Lost	Approximate Range of Average Contribution Per Cable Household Lost	Approximate Range of Potential Contributions Lost
1985	1,194,143	$0.47-$1.97	$562,615-$2,351,090
1986	1,962,199	$0.52-$2.18	$1,023,961-$4,278,991
1987	3,882,873	$0.58-$2.44	$2,267,661-$9,476,242
1988	5,159,001	$0.60-$2.50	$3,084,677-$12,890,440
1989	5,912,889	$0.64-$2.69	$3,810,626-$15,924,080
1990	7,131,615	$0.67-$2.80	$4,779,318-$19,972,111
1991	8,096,411	$0.68-$2.85	$5,513,890-$23,041,782
1992	9,125,511	$0.70-$2.93	$6,406,325-$26,771,148

25. I emphasize that these numbers simply illustrate the range of potential total dollar contributions that could have been lost as a result of Cable Drops in the period from fiscal year 1985 to fiscal year 1992. The actual dollar amount—if such a figure could ever be ascertained precisely—may fall around the low or high end of these ranges or somewhere in between, depending on a number of different factors. For example, if a particular set of stations that are dropped by cable systems happen to have relatively low Viewership Percentages, the approximate average contribution per cable household lost would fall within the lower end of the range of the Model, thereby yieding a lower estimate of the total amount of dollar contributions lost. Conversely, if the dropped stations as a group have relatively high Viewership Percentages, the approximate average contribution per cable household lost would fall within the higher end of the range, thereby yielding a higher estimate of the total amount of dollar contributions lost.

26. Further, as noted above, the foregoing estimated ranges of potential contributions lost are a measure of only *one* form of potential financial harm to public television stations as a result of Cable Drops. As discussed below, access to viewers is necessary to other forms of fundraising for public television stations, such as corporate

underwriting and foundation grants. Moreover, even those stations that do not rely as heavily on viewer contributions are dependent on access to viewers to justify the operating support they receive from other sources. In order to more accurately quantify the magnitude of potential harm, it would be necessary to include additional measures of financial harm resulting from lost access to cable subscribers.

27. Further, the use of data on only Cable Drops may understate the potential magnitude of harm to public television stations, because such data does not take into account an additional number of public television stations that may have been entitled to carriage but were never carried by the cable system ("Cable Non-carriages"). To illustrate the potential magnitude of such Cable Non-carriages, I have been provided with data, also compiled by Cable Data Corporation, that I understand includes both Cable Drops and Cable Non-carriages. Using the same percentages employed in the prior analysis for Cable Drops alone, the combined loss in potential contributions for fiscal year 1992 (when instances of Cable Non-carriage are included) ranged from approximately $24,112,228 to approximately $100,761,668. A summary of the potential loss in contributions resulting from both Cable Drops and Cable Non-carriages for the period from fiscal year 1985 to fiscal year 1992 is as follows: [3]

[3] A more detailed breakdown of this summary is attached as Exhibit F.

Fiscal Year	Approximate Number of Potential Cable Households Lost	Approximate Range of Average Contribution per Cable Household Lost	Approximate Range of Potential Contributions Lost
1985	12,532,350	$0.47-$1.97	$5,904,558-$24,674,334
1986	14,145,283	$0.52-$2.18	$7,381,624-$30,846,786
1987	17,606,467	$0.58-$2.44	$10,282,464-$42,968,995
1988	22,664,024	$0.60-$2.50	$13,551,306-$56,629,035
1989	26,176,244	$0.64-$2.69	$16,869,567-$70,495,590
1990	29,080,055	$0.67-$2.80	$19,488,271-$81,438,790
1991	31,737,216	$0.68-$2.85	$21,613,960-$90,321,752
1992	34,346,742	$0.70-$2.93	$24,112,228-$100,761,668

28. As discussed above, it is important to note that the foregoing numbers simply illustrate the range of potential total dollar contributions that could have been lost as a result of Cable Non-carriages for the period from fiscal year 1985 to fiscal year 1992. The actual dollar amount—if ascertainable—may fall near the low or high end of the ranges or somewhere in between, depending on the Viewership Percentages of the stations that were not carried and other factors. Further, if the number of subscribers represented by the Cable Non-carriages had been lower, then the approximate range of potential dollar contributions would be correspondingly lower. Conversely, if the number of subscribers represented by the Cable Non-carriages had been higher, then the approximate range of potential dollar contributions would be correspondingly higher.

29. Nevertheless, as discussed above, the use of the Model provides a measure of only *one* form of potential financial harm to public television stations resulting from lost access to viewers. The Model does not reflect other losses of potential revenue resulting from Cable Drops and Non-carriages. In that respect, the Model may even *understate* the amount of financial harm to public stations that could result from Cable Drops and Non-carriages.

II. Corporate Underwriting and Foundation Grants

30. Underwriting and other forms of support provided by businesses and foundations are also an important source of funding for public television stations. In fiscal year 1992, corporate underwriting and business support of public television programming totaled almost $232 million. This constituted almost 17 percent of the financial support for public television from all sources in fiscal year 1992. The data underlying these figures are contained in the relevant page of the income report generated by CPB, a copy of which is attached hereto as Exhibit A.

31. As with individual contributions, the ability of a station to obtain underwriting and other business support depends largely on the station's access to audiences. In particular, a local business is more likely to provide support if the station is widely carried or easily received on the major cable systems in its locality. Similarly, a national business is more likely to provide support if a station's signal reaches a large number of cable households. A corporate underwriter may also consider the quality or quantity of service offered by a particular station.

32. Based on my discussions with fundraising professionals at many public television stations, my knowledge of the experience of station personnel, and my own experience at KQED, it is my expert opinion that a station's ability to attract corporate underwriting support or foundation grants is likely to be adversely affected by drops and shifts by cable operators. Because such drops and shifts would result in the loss of access to audiences, the station's ability to attract corporate underwriting would be jeopardized. Specifically, based on my discussions with numerous corporate donors at the local level, it is my view that the opportunity to underwrite a public television station's programming becomes significantly less attractive to a local business if a substantial number of households in the community cannot view that programming. A local cable

system's refusal to carry the public television station reduces the potential audience for the station's programming and, therefore, is likely to lead a business to conclude that it would not be worthwhile to underwrite that programming.

33. The cumulative effect of a series of decisions by local cable operators not to carry local public television stations is to diminish the ability of the public television system as a whole to obtain underwriting for programs distributed nationally by PBS. Based on my discussions with national producers who seek national underwriting support, I am aware that a national underwriter will be disinclined to provide underwriting for programming that does not have the prospect of reaching a substantial audience that fits into a national profile. The size of the potential national audience is limited by the number of viewers who have access to a nationally distributed program, including those whose access is primarily or solely by cable.

34. The fact that two or more public television stations serve the same geographical area does not necessarily diminish the fundraising opoprtunities for each of those stations. Where several public television stations serve the same area, they tend to fill separate niches. For example, the second or third station serving an area may emphasize instructional programming or programming oriented toward a particular racial or ethnic minority group. To some extent, the stations will reach out to different groups of individuals in their fundraising efforts.

35. Even when two "mainstream" public television stations are available in an area, many individuals view both stations and make financial contributions to both. This was my experience in Northern California, where public television stations KQED and KTEH both provide a general audience service to the peninsula and south bay communities around San Francisco. During my tenure at KQED, it was my experience that both stations successfully forged loyal relationships with viewers and contributors. The two public television services offered distinct em-

phases to appeal to different audiences at different times. For example, KQED broadcast classical music and dance performance programs more frequently than KTEH, which emphasized science fiction and fantasy programs, as well as contemporary music programs that appealed to a loyal and appreciative audience. Informal research conducted by KQED indicated that some viewers recognized the distinctiveness of each service and supported both stations, and that each station also had a distinctive group of supporters.

Conclusion

36. Based on the foregoing, it is my expert opinion that, during the period from fiscal year 1985 to fiscal year 1992, unilateral drops and shifts by cable operators have resulted in substantial financial harm to individual public television stations in terms of losses in potential viewer contributions. It is also likely that loss of access to public television viewers served by cable resulted in lost corporate underwriting and foundation grants. Absent must carry legislation, any future unilateral drops and shifts by cable operators would likely result in further financial harm to public television stations.

37. In conclusion, it is my view that, by assuring that public television stations will continue to have access to potential viewers served by cable, must carry legislation serves an important public interest in maintaining the financial viability of public television stations and the public broadcasting system as a whole.

I declare under penalty of perjury that the foregoing is true and correct.

May 25, 1995.

/s/ Jonathan C. Abbott
JONATHAN C. ABBOTT

INDEX TO EXHIBITS

Exhibit A — Public Television Revenue FY 1991-1992

Exhibit B — Average Percent of Households Viewing Public TV for the Top- and Bottom-Ranked PBS Stations by DMA Weekly Household Cume Percent—Nielsen Metered Markets (32)—November '94

Exhibit C — Calculation of Percent of Public TV Viewing Households that Contribute

Exhibit D — Public Television Viewer Support FY 1980 to FY 1992

Exhibit E — Analysis of Potential Amount of Contributions Lost from FY 1985 to FY 1992 Based on Cable Drops (Excludes WNYE)

Exhibit F — Analysis of Potential Amount of Contributions Lost from FY 1985 to FY 1992 Based on Drops and Non-Carriages (Excludes WNYE)

[Exhibit A]

Public Television Revenue
FY 1991-FY 1992
(in thousands of dollars)

Sources	FY 1991	FY 1992	Percent of Total	Percent Change
Tax-Based Support				
Corporation for Public Broadcasting	$177,914	$184,507	13.3%	3.7%
Federal Grants & Contracts	$72,684	$99,587	7.2%	37.0%
Federal Support	$250,598	$284,094	20.5%	13.4%
Local Governments	$50,305	$51,650	3.7%	2.7%
State Governments	$255,182	$228,825	16.5%	−10.3%
State Colleges & Universities	$86,632	$89,836	6.5%	3.7%
Other Public Colleges & Universities	$12,258	$11,556	0.8%	−5.7%
State & Local Government Support	$404,377	$381,867	27.6%	−5.6%
Total Tax-Based Support	$654,975	$665,961	48.1%	1.7%
Private Support				
Private Colleges & Universities	$14,790	$12,250	0.9%	−17.2%
Foundations	$56,206	$65,967	4.8%	17.4%
Businesses	$229,967	$232,597	16.8%	1.1%
Subscribers	$285,852	$296,046	21.4%	3.6%
Auctions	$20,083	$20,163	1.5%	0.4%
All Other Private	$81,768	$91,677	6.6%	12.1%
Total Private Support	$688,666	$718,700	51.9%	4.4%
Total, All Sources	$1,343,643	$1,384,661	100.0%	3.1%

Note: Columns may not add due to rounding.
Source: CPB